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DIVISION OF REVIEW

ECONOMIC PROBLEMS OF THE LUMBER AND TIMBER PRODUCTS INDUSTRY

By

Peter A. Stone
William E. Yost
D. N. Burnham
C. Stowell Smith
Spencer H. Reed
Sterling R. March

WORK MATERIALS NO. 79

INDUSTRY STUDIES SECTION
MARCH, 1936

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U.S. Dept. of Commerce
May 5, 1936

FOREWORD

This study of the Lumber and Timber Products Industries was completed by Mr. William E. Yost, of the Industry Studies Section, Mr. M. D. Vincent, in charge.

The report concerns one of the oldest and largest industries in the United States, but because of lack of time and personnel the original plan for a report covering a study of the entire subject of Lumber and Timber Products has been curtailed to the basic portions only. Forests have been dealt with exhaustively. Logging and saw-mills have been covered extensively, but not as adequately as was desired. Other parts of this industry have only been touched. The stresses of administration have been pointed out, and their effects and results analyzed.

The National Lumber Manufacturers Association has cooperated with the Division of Review by generous contributions of data and by cordial availability for conference and discussion. On the page immediately following this foreword will be found a statement by the Association.

It should be pointed out that there are masses of material in NRA files and in the files of the Association that are not reflected, or are at best inadequately reflected, in this study. The report is precisely what the cover page implies, work materials for further study. It is to be hoped that in some way the subject may be reopened to the end that, through further cooperation with the industry, a more complete and informative report may be written.

At the back of this report will be found a brief statement of the studies undertaken by the Division of Review.

L. C. Marshall
Director, Division of Review

March 17, 1936.

Division of Review,
National Recovery Administration.

In response to a request from the National Recovery Administration, Division of Review, the National Lumber Manufacturers Association appointed a representative committee to review and comment on the work of the Division of Review in the preparation of a study of Economic Conditions in the Lumber Industry. Early in December the Committee received for comment a copy of the preliminary draft of the study. The Committee made a brief review of the preliminary draft and sent numerous suggestions and criticisms thereon to the Division of Review. Subsequently it was informed that the proposed report had been substantially changed in scope and content.

The final draft of the study, except for Appendices II and III was received from the Division of Review for transmission to the Committee early in March. Due to the necessity of having the report memeographed before April 1st, the time was insufficient to permit the members of the Committee to make adequate study of, or comment upon, the report; and they have not done so.

The proposed revised report, however, has been generally reviewed by the Association staff aided by conferences with members of the Division of Review. These have resulted in a partial but substantial correction of inaccuracies, and of important omissions of fact. Upon many points the Association is in entire accord with the statement of facts and conclusions by the Division of Review. On some points differences of opinion concerning the facts and their significance, and lack of sufficient time to collect and prepare pertinent data have prevented more complete agreement. On still other points the Association believes that the material has been presented in such fashion as to point to or at least readily to invite erroneous conclusions and unwarranted inferences.

The participation by the National Lumber Manufacturers Association in a review of this work does not imply either agreement or disagreement with the substance of the report or with its conclusions. Nor is it to be interpreted as signifying agreement with the approach to and planning of the study, the selection of material, the manner of presentation, or the conclusions stated in and to be inferred from the report. It is in entire accord with the judgment of the Division of Review that the time and facilities available for the preparation of the study and the difficult conditions under which it has been conducted, have not permitted the full achievement of a balanced, thorough, and objective study.

It is understood that a copy of this communication will be included as a part of the report of the Division of Review on Economic Conditions in the Lumber Industry.

Respectfully submitted,

NATIONAL LUMBER MANUFACTURERS ASSOCIATION

March 25, 1936

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ECONOMIC PROBLEMS OF THE LUMBER AND TIMBER PRODUCTS INDUSTRY

HISTORICAL SUMMARY

The Lumber Industry is one of our oldest industries. It differs from other industries in that the line of demarcation between processing and production of raw materials is not so pronounced. In lumber the production of raw materials is more analogous to agriculture than to industry in the accepted sense of the latter term.

The production of logs and timber perhaps preceded agriculture as an activity of the early colonists since shelter, as well as food, was an immediate requirement. Moreover, clearing of land in most cases was a required process to the pursuit of agriculture. It is no wonder then that the New England colonists engaged in lumbering as a principal activity, and for more than 200 years the forests of New England produced not only the materials for shelter required in America but could export considerable quantities to the West Indies and to Europe as well.

This does not mean that New England was the sole producer of forest products during this period. The Southern colonists also found rich stands of timber and proceeded to exploit these resources. However, the natural conditions which obtained were such that Southern lumber exploitation was only a minor factor as compared to agricultural activities. Nevertheless, the forests of New England were the principal source of lumber up until about 1880. In this discussion the region designated as New England includes Northern New York and Pennsylvania as well as what is now commonly termed the New England States.

After the Civil War and with the devlopment of the upper Mississippi Valley, the Lake States of Wisconsin, Minnesota and Michigan became the principal supplier of lumber. However, by this time production methods had improved and the steam sawmill with the circular saw allowed for more rapid exploitation of greater areas in a shorter time; hence it was only twenty years later that the peak of production passed from the Lake States to the South.

The period from 1870 to 1910 represents the years of greatest forest exploitation. The transcontinental railroads had opened up vast new territories, and new farms, towns and villages were being created at a rapid rate. The chief material for both farms and towns was lumber. Forests were close at hand and lumber was relatively cheap. This era reached its peak in 1906 and 1907, during which years approximately 46 billion feet of lumber per year were produced.

During the period after 1890 and when production in the Lake States began to decline there was a considerable movement to the Pacific Coast and the exploitation of the rich fir region of the Northwest became an important factor. The products of this region entered the interior markets with the opening of the Northern Pacific Railroad in 1892 and a considerable portion of the production found its way into the development of the prairie states just east of the Rockies. The fir region which lies west of the Cascades in Oregon and Washington had previously found its principal outlet in the requirements of the fast developing State of California. With its timber

growing right down to the shore line it was relatively easy to load its products aboard sailing vessels almost at the point of production.

In 1907 after the opening of the Panama Canal, thus providing an easier access to the Atlantic Coast, the production from the Pacific Northwest became an important factor in Eastern markets and has continued a struggle with the South for the softwood market.

It may be seen that the Lumber Industry has been a constantly migrating one, exploiting the most accessible natural resources and moving on to richer fields when its operating area became more difficult of producing both speculating and operating profits. As the industry moved on it left in its wake a less important segment in every region which had been exploited. This segment expanded or contracted as economic conditions warranted, but it was always a factor in the control of economic problems of the industry. The segment, composed of small mills which were more or less marginal factors during the greatest period of exploitation of an area, became the marginal factor which determined the degree of prosperity during the decadent era.

THE PROBLEMS

In a developing country with rich natural resources it was but natural that the best and most accessible timber should be cut first. It was this principle that motivated the industry to move from one area to another as rapidly as facilities for transporting the product became available. However, after the development of the Pacific fir region had reached a high stage, in which it was producing as much as the South, there were no new areas which offered possibilities of easily accessible virgin forests. It followed then that as the industry was forced back into the more inaccessible areas with its consequent higher cost of reaching the consuming market there was, of necessity, an increase in the price level.

At about this time many public spirited people became alarmed at the rate of exploitation of the forest and were led to predict an early exhaustion of forest resources. An important result of this alarmist attitude which had caught the popular fancy was an increase in timber speculation. If, reasoned the speculators, our standing timber is rapidly becoming exhausted, higher values of existing standing timber must necessarily follow. As a consequence large tracts of standing timber were purchased at mounting prices, with no thought at the time of converting this timber into lumber. Subsequent events forced the establishment of sawmill facilities for the sole purpose of liquidating these investments, but at the time of acquisition there was no thought given to this necessity.

Another development of this period was the rapid increase in the use of steel and cement. The perfection of the Bessemer process made steel an important competitor in buildings and other structures. The process for making cement had developed to the point where concrete, with its lasting qualities, entirely displaced lumber for sidewalks and other flooring purposes where heavy traffic was a factor. This, coupled with the rising cost of lumber, brought about a rapid displacement of lumber and a declining per capita consumption. This declining consumption was not apparent to the industry until after the World War, but toward the declining period of the post-war building boom it became evident that stumpage prices were likely

to remain at a standstill, and with mounting taxes stumpage became a liability. Hence it became necessary to provide facilities for liquidation, and this, with the advent of the depression, caused a complete demoralization of the lumber markets.

The increase in the price levels brought about by the migration of the industry into higher cost areas had another important effect. As stated previously, the small sawmill with its lack of volume facilities was always a marginal factor. Paying low wages and with small investment the small mill could operate in small timber that would be unprofitable for the large and medium-sized mills with the greater investment. However, since the timber available to this type of mill is so small, the mill cannot produce at a profit except at a price level that is high enough to warrant such production. Such mills operate in cutover areas located for the most part close to the areas of consumption. However, the result of their operation in such areas is such as to prevent the full regrowth of a given forest area to a point where it might again become an important producing region lying close to a consuming area. When the price level of lumber rose, due to the higher costs of the major portion of the industry, there was always the tendency to encourage the small mill to again enter production, thus increasing the volume to the point of over-production, causing a price decline which would force them to retire until the price rose again. In this manner the small mills acted as a pressure on the market.

The need for liquidation of speculative timber became apparent with a declining volume of use, particularly during the latter part of the building boom, and it was during this period that many new mills were put into operation for that purpose. During the depression this situation became more acute and from 1930 to 1932 mills continued to operate for the purpose stated above, although consumption had declined to about 25 per cent of the peak. This, of course, meant an enormous stock on hand each year during the depression years. The average amount of stock on hand during the 20's was about 14 billion feet. During these years between 25 billion and 39 billion feet per year were used, but between 1930 and 1932 it ran between 10 billion and 17 billion feet. The stocks on hand at the beginning of the year receded very little, averaging from 9 to 11 billion feet. Naturally prices were demoralized, wages were cut, and conditions became chaotic. Although this situation might not have appeared so rapidly had construction remained at the same level as that of the late 20's, eventually the over-capacity of the industry and the need to liquidate speculative holdings would become apparent; and although the depression brought about the chaotic condition, a depression in the Lumber Industry must have eventually come about under any circumstances if the industry had continued under the same influences.

THE CODE

After the passage of the National Recovery Act it was apparent that the industry was aware of the condition of over-capacity and chaotic prices, and in presenting its Code it had three major proposals:

(1) The regulation of production with a view to cutting down stocks on hand to meet demand.

(2) An increase in the wage level, which had fallen below subsistence levels.

(3) The fixing of minimum prices of lumber at a point at which it was estimated costs of production would be recovered.

The operation of the first provision eventually resulted in some decline of stocks. However, it provided for no permanent improvement; since the elimination of the Code the industry is in approximately the same position it was in before, as far as the fundamental evils are concerned, although the reduction of stocks during the Code provided a temporary benefit which will last for some time.

The fixing of prices apparently failed to bring any permanent good or contribute to any permanent improvement in the industry. One of the results of fixing of prices at a point of cost recovery was to increase the price above the point which would encourage a greater use. In fact it is believed by many students of the situation that the prices so fixed tended to retard an increase in consumption. Moreover there were many operating difficulties inherent in all attempts at determining true costs or in setting rigid price regulations for so vast and complex an industry as this one. In any experiment toward an improvement through public regulation or even industry regulation, price fixing apparently should be the last resort, but in this particular industry it is highly improbable that it should ever be resorted to since there are so many other ways of providing more permanent cures for obstacles to progress within the industry.

As to wage rates, there was a considerable increase in both the Northern and Southern sections. Without price fixing the increase in wage rates alone, it is believed, would have had a tendency to prevent the incursion of the numerous small mills dependent upon a higher price. However, with this increase in price level provided for under the Code many of the small operators believed they could either make a profit at the higher prices, even though they paid the minimum wage, or expected to evade the higher wages while thye collected the higher prices. During the very early part of the Code the former was the general rule; that is, a higher wage level was generally paid. But as it became apparent that the products could not be sold at the price level set, there was a greater tendency to evade the minimum wage. This wage level for the South, incidentally, was set at a point equal to that of any period in its history. This evasion of minimum wages produced bitter recriminations, since many of the small and medium-size mills, having once entered into production, were loath to discontinue. Nevertheless, toward the latter part of the codal period a great number of them did discontinue. However, since the elimination of the Code it is apparent that the general wage level has remained 15 to 20 per cent higher than during the depression period. In the West Coast it is probably 50 to 60 per cent higher on the average than during the lowest point of the depression.

As has been stated, the operation of fixed minimum prices for cost recovery proved burdensome and failed of any permanent good. This provision was canceled, therefore, six months prior to the Schechter decision which invalidated the NRA. There appeared no immediate after-effects, since by that time the various efforts of other Government departments to improve construction began showing results, which naturally increased the demand. It is believed that this demand had reached a point toward the latter part of 1935 that justified the price level, which had remained at about the point fixed

under the Code. However, with a lower stock on hand, in comparison to the general demand level, it is believed that prices may reach a disproportionate level again if industry, through its own efforts, continues to keep stocks at such levels.

CONCLUSIONS

(1) Chaotic conditions caused by excess stocks were relieved during the period of NIRA, but the Lumber Code failed to provide a permanent remedy for causes of such excess.

(2) The operation of price fixing has proven itself to be impossible, even under Government regulation.

(3) Labor has been benefitted by a rise in the wage level, which will apparently remain and is proportionate to the general wage level of the entire country. However, certain inherent characteristics of the timber and the psychology of those engaged in the Lumber Industry in the South are such that labor is not free to use its own bargaining power in any effort to maintain a reasonable level of wages.

(4) There are certain steps which might be taken by both the industry and the Government which might, in the long run, tend to improve the general level of the industry and the labor employed by it. Such improvement must start with the forests. It is recognized that for the purpose of a stabilized industry -- one that is not only kept at a reasonably high level but is continually improving -- there must be a continually improving forest status. In other words, the industry must be removed from one of a migratory nature to a more permanent position. This involves the operation of a forest, which is the basis of the industry, on a long-time continuous production basis. It has been demonstrated in European countries that this can be done. Not only in European countries are there continuing forests -- that is, forests with a sustained yield -- but there are a number of far-seeing corporations in the United States that have also placed their operations on such basis.

It must be remembered that first there are large areas of cut-over lands which will not come into production for many years -- particularly production of saw timber. There are other areas where saw timber would come into production in a reasonable period if it were allowed to grow, but that is now being cut in an immature stage, producing an inferior product at a higher cost. For such areas it is apparently impossible for private industry to bear the burden of taxation and other costs of holding until the timber comes to the income-producing stage. Such areas might be purchased by the Forest Service and held until they are income-producing, then sold to private industry for private production on the basis of selling the product, and only such product, that will permit of further growth and further yield. It is realized that this, in effect, recommends the Government going into the business of managing forests on a sustained yield basis, but as already pointed out, the costs, including taxes, fire prevention, etc., are such that these areas do not hold any possiblity for profit to private industry. These areas are located close to the consuming markets for the most part and would, in the long run, benefit the consumer by affecting the price level of lumber, and benefit the industry by removing a considerable threat of lumber cut from immature trees, thus overburdening the market.

It is realized that there are considerable holdings of timber areas by very small producers and farmers throughout the Southern states to whom such holdings are not burdensome. In order to encourage a proper regard for forestry among such holders, the Government might take advantage of the financial stringency among these holders by forming cooperative groups for sustained yield under Government aid in financing and fire and forest protection. All of these recommendations noted above have been more or less accepted by the Forest Service, who have partially initiated many of these provisions.

(5) Transportation rates should be lowered from the Atlantic seaboard west to Chicago and from the Pacific seaboard east to Chicago. This will encourage the use of timber from the Pacific Northwest, where exist the best resources and greatest excess holdings. A cut in rates from the Atlantic sea board would permit an extension of the market for lumber now moving by water from the Pacific Northwest.

(6) The industry may improve its product by the manufacture of more complete assemblies for building purposes and seek to promote shop fabrication as against fabrication on the job. This will enable individual manufacturers to obtain markets in which quality may be a selling factor. This would also tend to eliminate the more migratory manufacturers and promote forest management on a sustained yield basis.

(7) There has been considerable contraction in the lumber market along with that of other industries. For lumber this is particularly due to the loss of the Australian and other British Empire markets as the outcome of the Toronto agreement of 1933, in which preference was given Empire markets for Canadian lumber as against American lumber. The adjustment made in the recent trade agreement with Canada, in which some of the restrictions have been removed, should be carried forward in favor of the American lumber industry into any trade agreement with Great Britain, so as to restore to the American industry at least a portion of the markets equal to that restored to Canada by the United States.

CHAPTER I

INTRODUCTION

A. GENERAL DESCRIPTION OF THE INDUSTRY

The Lumber and Timber Products Industry has no clearly defined limits. Generally speaking, it is composed of all those engaged in (a) managing the commercial forests of the nation; (b) in the conversion of standing timber into useful products; and (c) in the distribution of those products to the consumers. The principal timber products are: (*)

Lumber, lath and shingles
Fuel wood
Hewn ties
Fence posts
Pulp wood
Mine timbers and mine props
Veneers
Cooperage stock
Poles and piling
Distillation wood
Tanning wood and bark

The Bureau of the Census defines lumber and timber products as

> "logging camps, merchant sawmills, combined sawmills and planing mills, including those engaged in the manufacture of boxes if connected with a sawmill, veneer mills and cooperage stock mills." (**)

The Lumber and Timber Products Industries Code extended a bit further than the Census definition and included: (1) Logs, poles and piling; (2) sawn lumber and other sawn wood products of sawmills, and products of planing mills operated in conjunction with sawmills; (3) shingles; (4) woodwork (millwork), including the products of planing mills operating in conjunction with retail lumber yards; (5) hardwood flooring; (6) veneers; (7) plywood; (8) kiln dried hardwood dimension; (9) lath; (10) sawed boxes, shook crates; (11 plywood, veneer and wirebound packages and containers; (12) certain additional minor products specifically provided for. (***)

(*) "A National Plan for American Forestry", p. 214. A report of the Forest Service (1933)

(**) "Forest Products in 1932", Bureau of the Census, Department of Commerce.

(***) Article II (A), Lumber and Timber Products Industries Code.

1. Forest Lands and Species

The basis upon which the entire industry rests is, of course, the forest land of the United States, which amounts to practically one-third its total land area, or about 600,000,000 acres. (Originally the forest area of this country was estimated to be 880,000,000 acres.) However, not all of this forest area is available for commercial use. About 495,000,000 acres out of the total area have been classed by the Forest Service as commercial forest land capable of producing timber of commercial quantity and quality, according to present day standards, and available for commercial use. (*)

In considering availability of saw timber, species play an important role. Not all species are suitable for the same purpose. Generally speaking, the entire species group is divided into two classes -- softwoods and hardwoods. The term "softwoods" is generally applied to all of the coniferous trees as distinguished from the broadleaf varieties, and does not necessarily apply to the actual softness or hardness of the wood itself. The term "hardwoods" is generally applied to all of the broadleaf trees when used commercially.

The geographical distribution of these species has determined to a great extent the divisions of the industry which have been followed more or less in its organization. Particular uses have sprung up in industrial processes which require certain species. Such species may or may not be interchangeable with other species. This division is fundamental in the industry's organization, and perhaps accounts for many of its problems, due to the fact that certain species are native to certain sections of the country only, whereas the use of the wood may be nationwide.

2. Early History

Since this industry had its beginnings with the early colonists, naturally the first forests exploited were those of New England and of Virginia, both softwood areas. The New England forest consisted chiefly of pine and spruce, and although they have passed through a cycle of exploitation and are about to enter into the second cycle of production, the area still produces the same native woods, with the possible exception of northern white pine which, because of its adaptability for most purposes, was used up most rapidly and had not been replenished to the same extent as spruce.

Prior to 1850 New England was the principal producing region, up to that time accounting for more than one-half of the total lumber used. However, between 1850 and 1860 New York and Pennsylvania took

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(*) See Table I. See Appendix II.

the lead. (*) These two states, while having a considerable amount of softwood, again principally pine and spruce, had a greater amount of hardwood, more suitable for manufacturing purposes than for construction.

What is said of New York and Pennsylvania applies as well to New Jersey, Maryland and Delaware, these five states comprising the Middle Atlantic Region. In the early periods of production in the Middle Atlantic Region the softwoods were quickly depleted, the hardwoods remaining, since uses for hardwoods had not developed to the extent that they had for softwoods. This area is still considered a hardwood producing section and under the Code was called the Northeastern Hardwood Subdivision, though combined with part of the easterly Lake States and also a part of the Appalachian Region.

The next major producing area, chronologically, was the Lake States -- Minnesota, Wisconsin and Michigan. Here the species were chiefly pine and hemlock -- both softwoods. However, this area has always had, in addition, a commercial growth of hard maple, though with some slight exceptions as to hemlock it now produces little softwood. It is still the principal maple producing section of the country, some 80 per cent of the maple flooring coming from that area. The peak of production for this area was around 1890, in which year the Lake States accounted for 34 per cent of the total lumber volume.

From 1890 to 1919, which was a period of rapid progress in the development of this nation, the forest area of the South, embracing Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, South Carolina, Oklahoma, Tennessee, Texas, Virginia and West Virginia, was the principal producing area. The species in this area consist of yellow pine and practically all the known domestic hardwoods. The former has become the most important commercially.

Short leaf pine flourishes on the Atlantic Coastal Plain as one of the fastest growing commercial species among softwoods, and its renewability has kept the region a continuous lumber producing area since the 1890's.

It should be understood that this shift from one area to another does not mean that the original areas were completely denuded, but merely that the new areas of virgin timber presented more attractive possibilities than the older producing regions, all of which are continuing producing regions to a minor extent.

3. Western Areas

Perhaps the most important development in the Lumber Industry is the expolitation of the western forest areas. These begin in the Rocky Mountain Region, extending throughout all the Rocky Mountain Region

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(*) "An Outline of General Forestry", by J. S. Illick, p.52 (1935)

The Douglas Fir Region, although called that, is not confined to Douglas fir but grows hemlock, spruce and cedar in addition. This region contains the most luxuriant stands of cedar in this country and is therefore the center of the cedar shingle production industry as well as being highly important in softwood production.

The Rocky Mountain Region, which includes the area east of the Cascades, together with the Sierra Nevada Range through California, grows Western pines. Some spruce and white fir are also found in this region.

On the West Coast is found the most luxuriant growth of timber in the United States, with the greatest commercial possibilities. The average stand per acre in the State of Washington is about 45,000 feet per acre. This is compared with 6,000 to 7,000 feet per acre for most of the Southern States. In California, chiefly in the few counties in the north central part of the state, lies the Redwood Region. Redwood trees are well known for their enormous size and their commercial possibilities.

Although the Lumber Industry in the West started in the early 1850's, it did not become commercially important until the completion of the Northern Pacific Railroad in 1882. (*)

As stated at the beginning of this chapter, although lumber is only one of the products of the forest it is by far the most important since the saw timber area consists of approximately five-sixths of the total commercial area. The ownership of this area therefore involves the Lumber Industry in the problems of forest management. However, most of the industry itself has only lately given adequate consideration to such problems. With the shifting of the industry as each new area was tapped, the acquisition of the virgin forests became one of the important factors in the development and management of the industry. Much of it was included with the land grants to the transcontinental railroads in the latter part of the nineteenth century. Some of it was acquired by those who were interested only in speculating on the increased values, but for the most part lumber producers attempted to acquire sufficient acreage and stumpage to assure themselves the longest possible period of continued operation.

4. Volume of Production

Turning now to the volume of lumber used in this country, it is found that a peak was reached in 1906 and 1907 with the large total of 45,000,000,000 feet for each of those years. Up to that

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(*) "An Outline of General Forestry", by J. S. Illick; p. 53 (1935)

time it had been continuously increasing. After that time it started on a downward trend. However, lumbermen, intent on acquiring a volume of stumpage for their operation, chiefly speculated on the increasing trend of production and were many years too late in becoming aware of the declining volume of consumption. Thus lumbermen found themselves, at the beginning of the depression, overstocked with timber acreage.

It may be well to explain here that the term stumpage is applied to the standing tree, and the value of stumpage is the value of the lumber content of the trees without regard to the land upon which they grow. This is usually calculated in board measure, log scale. The term "log scale" has various meanings and is applied with different rules in different areas, being particularly applied to a given species than to given geographical area. However, in speaking of lumber production the term "board measure" is used, which means one board foot equals a board one foot long, one foot wide, and one inch thick.

The first sawmill was established, according to one historian, in Jamestown, Virginia, in 1625. This, as well as other early colonial sawmills, was operated either by water power or windmills, It is believed that the maximum capacity of these early sawmills was not more than 500 board feet per day.

The first record of steam application was in New Orleans in 1811. However, shortly after that period, in 1814, the circular saw was invented, but it did not come into general use until about 1840. The first band saw was exhibited at the Philadelphia Centennial Exhibition in 1876. Such a saw today, with all other modern appliances, has a capacity of approximately 100,000 feet per day. (*)

5. Effect of Logging on Production

One important factor in the development of the Lumber Industry has been that of transporting logs from the woods to the mills. In the original development of the industry water transportation of logs by floating, and later by rafting and similar methods, was the principal means of transporting logs. In the woods, horses and mules provided the chief motive power for dragging the logs to places where they could be transported by water, or directly to the mill located in the woods. Indeed the production of logs was more a separate part of the industry in the first half of the nineteenth century than it has been since, due to the fact that logs were floated to central booms and could be purchased by mills which had no timber lands of their own. An open log market exists today only in the far Northwest.

Beginning about 1880, with the development of lumbering in the Lake States, railroading started in prominent use in log transportation, and has since become the principal factor for such transportation. This is an important factor in the cycle of timber areas.

(*) "An Outline of General Forestry", by J. S. Illick,; pp. 51, 56.

In the earlier timber developments where the more primitive methods were used, a lumbering operation developed to what would now be termed a medium size operation, but never to the enormous size of present day operation. This restriction was due to the limited means of supplying logs. With the development of railroad logging, however, operations grew in size, and toward the latter part of the Lake States lumbering period the newer enterprises were much larger than the earlier ones.

6. The Production Cycle

With the more primitive means of logging, clear-cutting, that is the complete denuding of an area, was not prevalent. It was economic to take only the most available logs, and there was a "thinning out" operation rather than a complete "logging off" operation. It is probable, for this reason, that the older areas have continued producing for a much longer period than the newer areas, and their renewability has been more pronounced. This fact brought about a cycle of developments which are illustrated in parts of Pennsylvania and the Appalachian Region. The cycle consists of, first, what might be termed preliminary operations of fairly small size, then the exploitation of an area on a large scale, and then the return again to small, portable operations.

However, with the development of railroad logging this cycle was not so pronounced. Railroad logging sometimes involved the laying of a railroad 80 miles in length. When an area was cut out the most economic thing to do was to salvage the rail line and completely abandon the workings. The upkeep and overhead of a railroad logging operation being so great, it wasn't feasible to continue on a small basis with the remaining thin stands. This also tended toward a complete cutting out operation rather than a thinning out operation, and in a measure is responsible for some completely abandoned areas of the Lake States and of the far West. In such areas the hope of sustained yeild operations presents much greater problems than in the older areas of the Appalachian and Southern districts.

The foregoing description briefly brings us up to the situation of the late twenties. In 1929 the Lumber Industry, as defined by the Census Bureau, was composed of approximately 18,556 units doing more than $5,000 in business annually, accounting for a total production amounting to $1,962,000,000, and had 539,775 wage earners, with an annual wage bill of $567,202,000. The mere figure as to the number of sawmills is not of important significance when it is considered that the first census giving the number of sawmills in 1840 recorded 31,650 sawmills in the United States. However, the 18,556 sawmills reported in 1929 had an annual capacity of 70,000,000,000 feet, whereas the 31,650 recorded in 1840 had a probable capacity of 7,000,000,000 feet, although the total production recorded for the year 1839 was only 1,603,000,000 feet. (*)

(*) Forest Service estimate.

There is still a large number of very small mills with a capacity of around 5,000 feet a day. On the other hand, some of the largest mills have a capacity of as much as 1,000,000 feet a day. The important factor in the difference today is the fact that the smaller mill must compete in the same market as the giant producer, and herein lies the beginning of many of the problems of production.

The peak of production was in 1906 and 1907 with 46,000,000,000 feet. It must be remembered that this peak of production came before the rich areas of the Douglas Fir Region and the Western Pine Region were fully developed and that the capacity in these areas, which is the greatest part of the total mill capacity, has been developed since that time. Coincident with this capacity development there has been a declining volume of production. Since 1917, with the exception of 1923 and 1925 when a total of 41,000,000,000 feet was reached, at no time has a total of 40,000,000,000 feet been reached. In 1926 a total of 39,000,000,000 feet was reached. However, in 1929 which is generally considered the peak year of industrial production, only 37,000,000,000 feet of lumber were produced. Following that year, of course, came the depression, the low point being reached in 1932 with only 10,000,000,000 feet of production.

At the beginning of 1930 there were stocks on hand of 9,500,000,000 feet. The depression did not become fully effective, as far as the Construction Industry was concerned, until the latter part of 1930, although shipments dropped from an average of 7,000,000,000 feet per quarter in 1929 to 5,000,000,000 feet per quarter in 1930. Stocks increased during the latter half of the year 1930 to 10,250,000,000 feet. This great stock on hand, together with the pressure of liquidation of the indebtedness incurred in the development of the West Coast Region during the boom period and particularly in the twenties gave rise to the most important problems of production. (*)

7. Labor

While no figures are available as to the number of employees in the early days of the industry, there has been a vast fluctuation during the later years, particularly for the period from 1919 on. Prior to 1919, although there has been a migration of the industry, [illegible] where it dropped employees in one area it would pick them up in another, bringing about a migration of employees as well as a migration of the industry itself. However, in the period of declining production, the effect of the drop in production on employees may be measured by the fact that the number of employees declined from 539,775 in 1929, when the total production was 37,000,000,000 feet, to 178,000 in 1932 when the production was 10,000,000,000 feet. While it is possible to estimate the number of employees in the industry back in 1906 and 1907 when the total volume was 46,000,000,000 feet, actual statistics on that score are lacking.

(*) Figures from National Lumber Manufacturers Association

In general, employees may be divided into two main groups-logging employees and sawmill employees. There is some difference in the type of labor and living conditions between the two. In those older areas where the more primitive methods still prevail, woodsmen still saw down the trees and teamsters haul the logs to the main point of transportation, whether that be mill pond or some gathering point such as railroad siding or fluming center. In the Northwest and in some of the larger operations of the South, particularly where railroad logging is involved, more mechanical methods are used. Heavy cables are strung over a wide area and large logs are brought to the railroad by means of electric or steam donkey engines and loaded onto the cars by steam loaders. More recently caterpillar tractors have been used in logging to an increasing extent, one advantage being that it is less destructive to remaining trees than the various cable methods.

The actual falling and bucking (sawing up the felled tree into logs of 16 to 40 feet lengths) have changed little from the original methods. One of the later developments is the use of a portable gasoline saw for both falling and bucking.

All of this involves a higher type of labor, with a consequent higher standard of living and a higher wage rate. However, the significant division between sawmill and logging labor is its method of living. Loggers, for the most part, are by necessity forced to live in camps which can be moved about from one center of logging to another. With modern methods it takes but a short time to log all the commercial trees on quite a large area. It is not feasible to have those engaged in theee operations living too far from their work. Therefore there are very few permanent living quarters for loggers. This means, of course, that they are, for the most part, unmarried and more or less transient in most of the producing areas. Where logging areas are more or less contiguous to agricultural areas, as in the South and Appalachian Region, logging labor is more or less interchangeable with that of agricultural labor and there is no clear-cut division between them, most loggers working part of the year in logging operations but having their permanent residences on the farms in the neighborhood.

Sawmill workers may be likened, for the most part, to any other factory labor, and in the western areas they are less transient than loggers.

In the South negro labor predominates in both sawmill and logging operations, but even here the negro labor in the Lumber Industry, particularly that of logging, can hardly be set apart from the agricultural negro labor of the South, of which it is also a part. Likewise, sawmill labor in the South, although for the most part negro, is somewhat similar to all factory labor in the South. The fact that such a great percentage of labor in the South is negro labor, and that there is considerable difference in the density of the timber stands of the South and those of the West, led to the important differences in Code wage provisions and gave rise to the important labor problems of the industry.

8. Lumber Uses

The consumers of lumber may be divided into three general classes.

First, and foremost, is the Construction Industry, including railroads, which consumes approximately 65 to 70 per cent of the total. Next in importance are the Wooden Package Industries, including boxes, barrels, etc., which industries consume from 15 to 20 per cent of the total. The balance goes into other industrial uses of varied sorts. Thus it may be seem that the most important determinant of where lumber is used is the volume of construction in different places and at different times. This also means that lumber is used to the greatest extent in centers of population. On the other hand the greatest centers of merchantable timber lie where there is the least population. This involves an important factor in marketing.

At the outset it was stated that the industry may be divided between the hardwoods and softwoods. In the softwoods, industrial consumption aside from wooden packages amounts to an insignificant factor, perhaps not more than two per cent, wooden packages about 22 per cent, and construction and railroads about 75 per cent.(*) Construction lumber as used here includes planing mill products and millwork used in buildings.

The softwood areas of the East and South are so located that their shipments to the centers of population of the Middle Atlantic States must be by railroad. The Western forests, on the other hand, being located on the coast with its harbors, require very little transportation to waterside, thus offsetting the apparent nearness of the Eastern softwood areas of production to the centers of population, and bringing about an important comtetive condition. The combination rail and water rates in the West makes this competition more acute.

9. Production Costs

This competitive transportation factor reaches into production, which makes the cost of production also an important factor in competition. The comparison between the cost of production in the Southern Pine Region and the Douglas Fir Region is as follows:

	Douglas Fir Per M feet (Per Cent)	Southern Pine Per M feet (Per Cent)
Stumpage	13.1	17.6
Logging and mill labor	27.6	30.9
Other logging and mill costs	35.5	25.0
Shipping and selling labor	5.7	6.6
Other shipping and selling	6.5	4.4
Officers' and owners' pay	3.2	4.4
Administrative overhead	8.4	11.1
	100.0	100.0

(*) Table XLIII

In view of the wide difference in the type of labor employed and the dissimilar conditions of operation, the similarity of the proportionate relation of costs between the two areas is remarkable and indicates that methods have been worked out to meet the competition rather than to take the greatest possible advantage of the area. The importance of transportation as a competitive factor is reflected in the breakdown of the selling price of Douglas Fir and Souther Pine, which shows that manufacturing costs are 46 per cent, transportation costs 30 per cent, and distribution costs 22 per cent of the total price. Thus in spite of the comparatively small selling margin, 22 per cent, the manufacturer received less than one-half of the consumer's dollar. (*)

10. Transportation

The chief means of transporting lumber has been by water and rail. The use of trucks in lumber transportation is a comparatively recent development. Water has always been considered the most favorable means of transportation because of the bulkiness of the product, except for the finer grades of some species easily damaged in handling. In the 1870's, when canalization was making rapid strides in this country, this means of transportation was used to considerable extent. In 1872 nearly 1,500,000 tons of forest products moved into the Hudson River from the Erie and Champlain canals. The development of the railroads, of course, brought about the replacement of canals to a great extent, as shown by the fact that by 1907 the canal movement of lumber had dropped to less than 250,000 tons (**)

In the 1880's when the center of production had moved to the Lake States it was quite natural that water transportation should be the chief means used, and this is shown by the figures reported for 1885 when 659,000,000 feet of lumber were shipped via the Great Lakes and 149,000,000 feet moved by rail. However, as western railroads developed this also changed, and in 1897, 379,000,000 feet moved by rail into Chicago, as against 89,000,000 feet by water. It is stated in the above cited report that in 1885, 81 per cent of the lumber reaching Chicago came by water. In 1913 less than nine per cent arrived by this route.

When the center or production moved to the South in the 1890's water shipment of lumber to the North Atlantic ports was most important. In 1890 out of 996,000,000 feet delivered by water to the port of New York, 393,000,000 feet or more than one-third of the total came from the South. As late as 1907 out of a total of 447,000,000 feet of Southern pine shipped to New York, 224,000,000 feet were discharged from vessels.(***)

(*) Tables LI and LII

(**) Report on Transportation by Water in the United States, by the U. S. Commissioner of Corporations, Part II (1909).

(***) Report on Transportation by Water in the United States, by the U. S. Commissioner of Corporations, Part II (1909)

However, after 1907 as the network of railways in the South increased, rates competitive with water transportation were established and the area closest to tidewater was logged out, which meant that as the centers of production receded inland, the water-borne movement of Southern pine on the Atlantic seaboard decreased to an insignificant amount.

The early development of the Lumber Industry on the Pacific Coast is largely linked with water transportation. California was the earliest market for the products of the Douglas fir region which, as has been shown, lies west of the Cascades, north of the California line. Many Mills in the early days were erected for the sole purpose of shipping lumber to California by water, and as heretofore shown it wasn't until the completion of the Northern Pacific Railway in 1882 that rail shipments figured at all in the production of this area.

In the year 1902 something over 571,000,000 feet of lumber were shipped from the State of Washington by water as against 562,000,000 feet by rail. Although production increased by 1906, there was a slight change in the proportion shipped by rail and water, the former taking the lead. Total water shipments in that year amounted to 1,100,000,000 feet as against 1,500,000,000 feet by rail. However, in the early 1920's the shipments of Pacific Coast woods to the Atlantic seaboard began moving through the Panama Canal in subtantial volume. The year 1922 saw 1,122,000 tons of forest products going through the canal from the Pacific to the Atlantic seaboard (a ton equals approximately 800 board feet). By 1926 this volume had increased to 3,312,000 tons. This development of water transportation has been the most serious factor of competition and has placed Douglas fir on a parity with Southern pine in spite of the latter's more favorable location with respect to consuming markets.

The fact that trucks became a factor in transportation during the period of the depression has been noted. This was chiefly due to the increase in highways during the boom period of the late twenties, extending through the years 1930 and 1931. It is chiefly a development in the delivery of lumber from the Southern pine area and Southern hardwood areas to the Mid-Atlantic and North Central States from the more nearby producing areas to those locations. This form of transportation received some impetus during the Code period, since in most cases, with fixed prices based on costs, the amount of transportation was the only competive factor. Such transportation may have been further accentuated by the fact that throughout the entire period of depression purchases were made in minimum quantities. Minimum quantities could be delivered by truck at a much lower cost than the less-than-carload rate generally applicable to lumber shipments.

11. Distribution

In the early history of the industry, with the small output per day, mills usually sold their output in their immediate locality. Lumber was used close to its source of production since centers of pupulation and the centers of production were not so widely segregated. As villages grew into towns and lumber output increased there developed the retail lumber dealer. For many years the retail lumber dealer was the sole distributor of lumber products. In those early days the retailer's field was considerably broader than that of today. Evidently there was

some competition between mills selling direct within a given retailer's area and the retailer, for it is recorded that in 1850 a convention of lumber retailers protested against manufacturers selling to their customers -- undoubtedly the local builders.

Not only was there an increase in the number of individual retailers, but with the advent of the large band saw mills, with their enormous production, such mills established their own retail yards in the newer towns and cities.

No records are available as to when the wholesaler enetered the picture but it is quite probable that with the demand for larger and larger quantities a distributor might require the output of a large number of mills. Further, the number of retailers had been growing at a rapid rate. All of the new towns which sprang up in the last 25 years of the nineteenth century and the early part of the twentieth century, due to the development of the new transcontinental railroads, resulted in an excess number of dealers when such new developments fell off. However, during the period of this development, retailers, due to their number, had no access to all possible sources, and it is quite probable that the earliest development of wholesaling was that of the establishment of distributing yards to serve other retailers who were established in the larger cities. All of this is very much in the nature of surmise, since no historical records of these developments are available.

Records do show that the National American Wholesale Lumber Association reported 573 members in the year 1928, and estimated that in 1933 there were approximately 1,438 persons engaged in that business, although there were only 238 members of the Association. Roughly it may be estimated that during the boom period of the late twenties there were approximately 2,000 persons engaged in the wholesale business.

The term "wholesaler" may be applied to various types of dealers. Little is known of the development of each type. However, the original type, which still functions, was the wholesaler who sold only to retailers requiring the output of several mills. This type of wholesaler maintains regular salaried employees who call upon the trade, and is distinguished particularly by the fact that he supplies credit to the mills, ofttimes financing some of the smaller and mediumsized mills through a contract arrangement whereby he disposes of their entire output. It is quite probable that with the development of the lumber market, which occurred at a considerable distance from the sources of production, the smaller mills had fewer facilities for disposing of their product and were forced to turn to this type of distributor rather than sell either direct to consumers, which at best could be only local consumption, or to retailers at distant towns and cities.

Coincident with the development of this type of distributor was the establishment of distribution yards. Such wholesalers maintained central yards within a given area from which they could supply smaller amounts to the local retailer and furnish quicker service than could be obtained if the retailer had to depend directly upon the mills for his source of supply. Many mills, particularly of the larger type, also maintained such distributing yards in principal centers of consumption.

A third type of wholesaler came with the development of large buildings. It became apparent to contractors requiring 20 and more carloads of lumber for a single project that they should be in a position to purchase their requirements either from wholesalers or di direct from the mills. The older established retailers, as shown heretofore, have always considered themselves to be the main contact between the consumer and the source of supply, whether that supply be from the wholesaler, distribution yard or the mill. Naturally such retailers were at all times under vigorous opposition to wholesalers who acceded to the demands of the large builder in supplying such builder's needs. Quite naturally they used every means at their disposal to mai maintain such business, and their principal means was the boycott of wholesalers or mills which engaged in such dealings. This led to the establishment of wholesalers, who depended in the main upon the business of large contractors and other large users.

There has also developed in this industry, as in most other manufacturing industries, the broker and the commission man. There is very little distinction between the two, the principal distinction being the fact that a commission man usually aligns himself with one producer and represents that producer in all his dealings, whereas a broker feels free to sell lumber on a commission basis, transferring the order to any producer he thinks can fill the needs and who can give him the greatest advantage. Brokers, as a rule, are not expected to supply credit to either the producer or the buyer, but merely to act as an intermediary between the two.

12. Improvements in Product

In the early days of the industry, with the inadequate facilities of the lumber mill of that time, it is but natural that the product was rather crude, being but a slight improvement over the hand sawn product. Dimensions were irregular and there was an inadequate knowledge of the properties of the various species, which led to considerable misuse of lumber. Prejudices grew up which had no foundation in scientific fact.

The first step toward improvements in lumber was a realization of the importance of the drying process. The water content of lumber determines its shrinkage; hence when green lumber, that is, newly cut lumber, is used it may shrink considerably upon drying out, causing the product made from that lumber to become loose and function improperly. In the early days air drying was the principal method used, a method which is in considerable use today and is, in many cases, the cheapest way of curing lumber. However, to improve the product and to make it usable as soon as possible after sawing, the establishment of dry kilns became common. Kiln drying is merely a method of drying the lumber by heat in buildings built expressly for that purpose. The process, controlled to prevent too fast drying which will warp and check the lumber, enables the producer to accurately control the water content of the product he sells. This process is also important in the competition between the small mills and the large mills. The small mills, with inadequate facilities or a small production which does not warrant the investment required for dry kilns, produce, on the whole, a poorer product than the large mills.

The investigation of the properties of wood was a further step in the improvement of lumber. It was found that various pieces from the same tree had properties different from other pieces. Also, the effects of knots upon the structural properties of lumber and timber were measured.

With these refinements came the establishment of grades. Originally the knowledge of hardwood grade was kept from the consumer. It has been stated by a prominent hardwood lumberman that one of the earliest conventions of the hardwood lumber producers was marked by a vigorous fight to oust one of their members who had disclosed some of the secrets of grading to one of his customers. This tendency to withhold grades from the customer, which allows manipulation by unscrupulous dealers, though deplored by the majority of members of the industry, has so far failed to become of sufficient moment to the producers to induce them to mark the grade upon the product except in some instances. There has been, however, considerable agitation for grade marking in the past few years and grade marking has received considerable impetus.

There have been a few recent refinements in sawing lumber. However, many of the old prejudices remain, and for general competitive purposes the buying public has not yet been educated to the point of demanding individual quality. Hence there has been no encouragement to individual producers to improve the quality of their products.

As yet the properties of the producers rather than of the consumers, which makes lumber a product that competes within certain classes chiefly on price, the general species of softwoods being considered competitive with each other.

13. Other Lumber Products

Up to this point the discussion has been confined principally to the production and distribution of lumber. However, the Lumber Industry under the Code considered itself as including woodwork, hardwood flooring, veneer and plywood, dimension, and wooden package producers.

Woodwork is generally considered to include planing mill products, that is, such items as molded pieces, sash, doors, frames, and other products for building requiring more fabrication than just plain lumber. Woodwork, in turn, may be divided into two branches namely, stock millwork and special millwork. Stock millwork is considered as the product of those producers who manufacture sash, doors, blinds and other millwork of standard dimension, including, of course, molding, which, in most cases, is manufactured directly in connection with sawmills and is usually stock. Many large sawmills have woodworking departments for the production of stock millwork.

Special millwork has no defined limits; there is no point where the craft of cabinet making is separated from that of special millwork. Special millwork, besides including sash, doors and other building products not of standard dimension, also includes special

shapes and carved work wherever the producer of such millwork feels that he is able to produce it. The fact that there was no such defined limit was the source of the most bitter jurisdictional dispute during the entire codal period as it concerned the Lumber Industry. Many of these products, which are made to order chiefly from architects' specifications, are made in shops connected with retail lumber yards. However, such shops can produce the requirements for only small projects. The large building project requiring special woodwork must look to the large shops capable of producing such. Much of this is done in factories whose principal output is that of stock millwork. Hence it becomes hard to strictly divide the entire woodwork industry between sawmills, stock millwork producers and special millwork producers. Some mills are capable of producing the most intricate of woodwork designs, while other mills do not extend beyond planed lumber. There are some stock millwork producers and, indeed, some special millwork producers among the groups with smaller shops, who, if given such an order, would have it executed in a larger plant capable of more economic production.

Hardwood flooring producers have for a long time been organized as such, due to the fact that this product is made on special machines. It does not follow the usual channels of distribution, although most lumber dealers stock hardwood flooring. Having a larger number of grades and the methods of production and distribution being different, hardwood flooring has generally been considered a separate part of the industry, although its base product is hardwood lumber. Due to the fact that hardwood flooring is produced in special machines, some of it is made by those engaged in producing flooring and not lumber.

There are three general branches of this industry, namely, the oak flooring producers, whose product is oak flooring produced in an area which centers around Memphis, Tennessee, and extends through the Appalachian and North Central hardwood producing states; the maple flooring producers, located chiefly in the vicinity of Cadillac, Michigan, with a production amounting to approximately 80 percent of the total used, about 15 percent being produced in the New England States and a small amount in the Southern States (however, the maple flooring industry considers itself chiefly a Michigan producer); and special flooring producers who are engaged in producing made-to-order types of hardwood flooring.

Both veneer and plywoods are produced by manufacturers who are very closely allied with the Lumber Industry in view of the fact that they are produced direct from the log rather than from manufactured lumber. This is a newer part of the industry and represents the most economical utilization of the tree, the veneers being sliced off the log in thicknesses of one sixty-fourth to one-quarter of an inch. When two or more layers of such wood are glued together they are called plywood. The finer and more decorative woods are produced in this manner and for such things as furniture are really competitors of solid lumber. Among those sawmills that also produce veneers and plywood the principal reliance is on sawed lumber. Plywood, particularly, is the one part of the industry that is growing, since new uses are being found

for this product in late years. As a competitor of solid lumber, plywood, although producing an increase in dollar volume for the amount of tree that it uses, may be largely responsible for decreasing the amount of solid lumber in industrial and construction uses.

The next most important Division of this industry is the Wooden Package Industry. This branch of the industry is further subdivided principally into the Sawed Box and Shook Division, the others being such Divisions as Plywood Package, Egg Case, Wirebound Box, and Wooden Pails and Tubs. It has been stated that wooden packages represent approximately 15 to 20 percent of the entire lumber production. In some Divisions of the Lumber Industry, however, as, for instance, the Western Pine, 33 percent of the production goes into wooden boxes and shooks ("shooks" is the term applied to the finished pieces that go to make up the wooden box). This product is preponderantly manufactured in factories connected with sawmills and is an outlet for much of the lower grades of lumber and the poorer species of timber.

In 1920 out of a total of 18,356 producing plants, 792 produced wooden box products. The Wooden Box Division is also the more seasonable part of the industry because a greater part of its products are used for shipping agricultural products, and the season therefore follows the harvest season.

The independent establishments in the manufacture of wooden crates, boxes, etc., are located chiefly in the East and away from the lumber producing centers. Such plants purchase their lumber, usually the lower grades, for the manufacture of the various types of boxes and packages for industrial use. It is this part of the Wooden Box Industry that has been the hardest hit by the substitutes paper board and paper boxes, the paper box field having not yet been extended to include agricultural products in any substantial amounts.

Another Division included as a part of the industry, chiefly because the product is manufactured in connection with sawmills, is that of the Kiln Dried Hardwood Dimension Industry. By hardwood dimension is meant both the cutting and shaping of wooden parts used in industrial processes. This branch of the industry plays an important part in the application of wood to industrial products, an illustration being the Furniture Industry. Wooden parts for furniture, in fact entire peices of unassembled furniture are now manufactured in sawmills, the only process required to make them into finished furniture being that of assembling and finishing.

This industry has developed rapidly within the past few years, chiefly because it represents a method delivering wood products nearer to its point of distribution with less waste. In some instances as much as 40 percent of the lumber used in the manufacture of various wood products represents waste. The savings from making finished parts nearer the point of lumber production, and the avoidance of the shipping of waste products, represent a considerable saving to industry. This development is a further step in the integration of the industry and

seems to hold the chief hopes of that industry in maintaining a higher ratio of hardwood lumber consumption.

Practically all of these auxiliary Divisions, while not contributing very significantly to the basic problems of the Lumber Industry, were included under the Code, bringing with them all of their minor problems to complicate the operation of the Code, which, in the first place, was pointed toward the solution of the problems of the Lumber Industry.

B. SCOPE OF DISCUSSION

To sum up, the broad background of the entire Lumber Industry as it presented itself up to the time of the Code has been outlined here. The purpose of Code action was a solution of the problems of the industry. From this point forward the discussion of these problems is divided into the following fields:

First, the basic problems of standing timber, which is the base of the Lumber Industry. These problems concern themselves with volume, location, timber ownership and value, and costs of holding, and efforts at conservation -- in fact, all of the problems of forest management.

Second, the problems of production. These, while closely related to species and the problems of forest management, are also concerned with special problems revolving around volume, costs, labor, capacity, capital, credit, etc.

Third, the problems of distribution. Involved here are the factors of competition, both regional and species, the demand factors, the problem of substitutes, prices, transportation costs, etc.

Fourth, a resume of the attempts to meet these problems through the medium of a code of fair competition and an analysis of the operation of that code, and

Finally, the present status of the industry and issues relating to its future needs.

CHAPTER II

THE PROBLEMS OF FOREST MANAGEMENT

Forest management has a wide range of meanings depending upon the purposes underlying it. Thus in commercial forest management there is a tendency to stress the principles of profit and maximum production, whereas in public forest management special emphasis is usually placed upon the principles of sustained yield and highest use and service of the forest. The Society of American Foresters defines it as follows: "Forest management is the practice or application of forestry in the conduct of the forest business."

A. TIMBER SUPPLY AND LOCATION

Like all natural resource industries, the successful development and management of the lumber and timber products industries are dependent upon: (1) The location of raw materials with respect to consumer requirements; and (2) upon the form, character, volume and accessibility and, therefore, cost of material in a specific region which would permit its use or conversion at a profit.

These dependencies involve problems of cutting, of transportation, of competition with similar products and possible substitutes, of costs of raw material and conversion, and of demand. The supply, location, and other characteristics of the principal kinds of timber available for conversion into useful products are described in this section.

1. Present Forest Area

From the original forest area of more than 800,000,000 acres, approximately 304,000,000 acres, or 38 per cent, have been withdrawn from commercial timber growing. This withdrawal is made up of 150,000,000 acres chiefly cut to clear land for farms in early days and the timber destroyed because of no market; 10,000,000 acres of reservations, parks, preserves, etc.; and the balance cut over for timber and subsequently for use for other purposes.

The conversion of forest land into farm land is still going on, particularly in the West, where the removal of virgin timber of relatively low present value for commercial purposes releases good soil for farming. It is estimated that eventually some 2,000,000 acres of commercial forest land in the West will be removed for this purpose. In the East, however, an opposite tendency is being manifested on a major scale, for here farms are being abandoned and becoming increasingly available for forest use. Already some 52,000,000 acres are estimated to be so available, and it is estimated that from 25,000,000 to 30,000,000 additional acres of abandoned farm and other lands may be added to the commercial forest area by 1950. Further, 3,000,000 acres of treeless prairies could be planted if the need for increased forest area develops. This acreage of abandoned or potential forest area, on account of its variable quantity, is not considered in this study.

a. Commercial Forest Area

The remaining 495,000,000 acres left of the original 800,000,000

acres of forest area, after deducting the 304,000,000 acres cited above as withdrawn from commercial timber growing, constitute the present commercial forest area and encompass the following discussion.

The South contains the largest area of commercial forest lands, with approximately 40 per cent of the total for the United States. The Pacific Coast region ranks next, with a little over 13 per cent; closely followed by the Central region with about 13 per cent; and the Lake region, with slightly over 11 per cent. These four regions contain about 78 per cent of the total commercial forest area. The Middle Atlantic region contains the smallest area, or about 5 per cent; while the other three regions, New England with 6 per cent and the North and South Rocky Mountains with 7 per cent and 6 per cent, respectively, possess the rest of the acreage.(*)

Approximately 365,000,000 acres, or 74 per cent, of the commercial forest lands lie east of the Great Plains, with the balance stretching westward from the Rocky Mountains.

About 38 per cent of the total commercial forest area of the United States is characterized by trees large enough for saw logs, in accordance with prevailing logging and milling practice, and is therefore designated as saw-timber area. Of this area, 55 per cent is located east of the Great Plains. Here again the South leads in this type of land, claiming 30 per cent of the total, while the Pacific Coast ranks next with 23 per cent. The Lake States contain the least saw-timber land, or approximately 3 per cent of the total, followed by the Middle Atlantic States with about 4 per cent.

(*) Throughout this report in discussing timber or timber lands various regions are referred to as follows:

New England	Middle Atlantic	Lake	Central
Connecticut	Delaware	Michigan	Illinois
Maine	Maryland	Minnesota	Indiana
Massachusetts	New Jersey	North Dakota	Iowa
New Hampshire	New York	Wisconsin	Kentucky
Rhode Island	Pennsylvania		Missouri
Vermont			Ohio
			Tennessee
			West Virginia

South	Pacific Coast	N. Rocky Mt.	S. Rocky Mt.
Alabama	California	Idaho	Arizona
Arkansas	Oregon	Montana	Colorado
Florida	Washington		Nevada
Georgia			New Mexico
Louisiana			South Dakota
Mississippi			Utah
North Carolina			Wyoming
Oklahoma			
South Carolina			
Texas			
Virginia			

Twenty-four (24) per cent of the commercial forest lands contain trees too small for saw logs but large enough for cordwood, regardless of whether the stand is to be cut for cordwood or held for saw timber. As would be expected, the states east of the Great Plains contain most of the cordwood areas, or about 85 per cent, due to the fact that a greater proportion of the virgin timber in the East has been cut over, thus releasing the lands for second growth.

The bulk of cordwood lands, or 44 per cent of the total, are located in the South. The Central States come next, with 21 per cent; followed by the Middle Atlantic and Lake States with 9 and 7 per cent, respectively. New England has the least, approximately 4 per cent, and the other three regions possess approximately 5 per cent each. The relatively small cordwood area in the Pacific Coast States is due to the high percentage of virgin saw timber on their total commercial forest area.

Restocking areas comprise lands that once supported a stand of timber and which are now being renewed. The bulk of this new growth is smaller than cordwood size. Fair to satisfactory restocking areas, according to present standards, may be defined as lands 40 per cent or more restocked with commercial species, while areas with a lower "restock" percentage are considered poor to non-restocking areas.

Restocking lands constitute about 37 per cent of all commercial forest lands and, as is to be expected, they are found in those regions where the largest volume of lumber has been produced over a considerable period of time, namely, in the South and the Lake States. The South contains over 80,000,000 acres of such area, or 16 per cent of the total commercial forest area of the entire country. Of this amount nearly one-half is considered fair to satisfactory reproduction. The Lake region contains restocking lands amounting to 8 per cent of the total commercial forest lands, with 67 per cent of them fair to satisfactory.

The eastern regions contain nearly six times as much reproducing area as is found in the western regions, and the proportion of fair to satisfactory restocking lands to total restocking lands is much greater. Reproducing areas are in the best condition in the New England and Central regions, approximately 70 per cent containing fair to satisfactory reproduction. The poorest reproduction is found in the South Rocky Mountain region, where only 9 per cent of the reproducing areas are fair to satisfactory.

It is apparent that the commercial forest lands of the United States are, generally speaking, so distributed as to produce future supplies of forest products fairly close to large population centers, and therefore to expected demand. Possible exceptions are the New England and the Middle Atlantic regions, where the expansion of forest industries to anywhere near their former capacity might necessitate the drawing of partial future supplies from the South and West. The commercial forest lands in these two regions, however, if intelligently managed, may be expected to produce forest products considerably in excess of their consumptive demands. Of course there may be a trend of future forest industries toward regions of abundant supply, a movement which has characterized such industries in the past.

2. Forest Stand

From the standpoint of future generations, the forest area now available will furnish sufficient land for the growing of required forest crops. For the present and immediate future, the supply of timber now standing, its location with respect to the need for forest products, and its marketability are of prime concern.

In 1928, through the McSweeney-McNary Act, Congress authorized a national survey of the timber resources of the United States. Its objects, for the survey is not yet complete, are: (1) To make an inventory of the present supply of timber and other forest products, (2) to ascertain the rate of growth, (3) to determine the drain on the forests through industrial and other uses, and from fires, disease, etc., (4) to determine the present and probable future requirements for timber and other forest products, and (5) to correlate the findings with existing and anticipated economic conditions.

Although the field work on over 150,000,000 acres has been completed and substantial progress made on the complicated office work of this national survey, no results are yet available for any one state or group of states. The area, stand, growth and partial drain figures in this report, therefore, have been largely taken from U. S. Forest Service sources. (*)

Preliminary and unofficial estimates gained from the survey cited above indicate that some of the stand and growth figures taken from the Forest Service reports are too low. It is believed, therefore, that the conditions described and conclusions reached in this report are conservative.

a. Stand on Total Area

Products derived from the forests are of widely varying character, and their unit volume is expressed in a number of different ways. Thus, lumber and logs are expressed in feet, board measure; fuel wood, pulp wood, distillation wood, and other cord wood, in cords; hewn ties, fence posts, staves and hoops, shingles, poles and piling, in pieces; round mine timbers, in cubic feet; and slack heading and tight heading cooperage, in sets. The only possible common denominator of measurement is cubic feet. Chart II and Table II show the total stand, expressed in millions of cubic feet, of all forest products estimated to be standing in tree form on the approximately 495,000,000 acres of commercial forest land.

Fifty-six (56) per cent of the forest stand of the United States is in the West. The Pacific region, with 39 per cent of the total, has the largest stand. The South is next, with 23 per cent, and the Lake region last, with 4 per cent.

(*) U. S. Forest Service. The Forest Situation in the United States; a special report to the Timber Conservation Board, January 30, 1932; and Senate Document #12, A National Plan for American Forestry, 1933.

Softwood comprises about 74 per cent of the total stand in the United States. In the eastern regions 40 per cent of the stand consists of softwood, and in the western regions practically 100 per cent is softwood. Hardwoods predominate in the New England, Middle Atlantic, Lake and Central regions. Only one region east of the Great Plains, the South, contains a greater volume of softwood than hardwood.

b. Stand on Saw Timber Area

The stand on the saw-timber area comprises 75 per cent of the total United States stand, with hardwood predominating in the eastern region and softwood in the West. Eighty-one (81) per cent of the total stand on the saw-timber area is softwood. The stand on the saw-timber area is further discussed in terms of board feet, under the caption "Saw Timber Stand."

c. Stand on Cordwood Area

The stand on the cordwood area amounts to 20 per cent of the total stand of the United States. About 81 per cent of it is located east of the Great Plains. Thirty-eight (38) per cant of the Eastern total and 99 per cent of the Western total is softwood. The South has the largest cordwood stand, i. e., 39 per cent of the total, of which 61 per cent is softwood. In all of the Eastern regions, except the South, hardwood greatly predominates in the cordwood area.

d. Stand on Restocking Area

The stand on the restocking area amounts to 4 per cent of the total stand in the United States. (*) A breakdown of the restocking area into softwood and hardwood is impossible from existing data. Of the various regions, the South again leads in volume of stand on the restocking area, with 42 per cent of the total volume. The North Rocky Mountain region is next, with over 14 per cent, followed by the Pacific, Middle Atlantic and New England regions. The South Rocky Mountain region has practically no volume on the restocking area.

e. Saw Timber Stand

From the standpoint of both the lumber industry and the public, the amount of saw timber, its character, and its availability are forest management problems of fundamental importance. Not only does the supply of saw timber take care of current lumber and other important requirements but it governs present and possible future competitive conditions for the industry and forest products users. Chart III and Table III show the present saw timber stand of softwood and hardwood and the various classes of ownership.

The saw-timber stand in the United States is estimated to be 1,667,-803,000,000 feet board measure. Of this 59 per cent is privately owned, and the balance is owned or administered by the public in the form of

(*) Omits data for Lake region, which are not available.

national, Indian, state, county, and municipal forests. Of the privately owned timber 88 per cent is owned by land, lumber, pulp and paper, and mining companies; naval stores operators; railroads; and miscellaneous individuals and agencies; and the balance by farmers.

All of this supply is not immediately available because of poor location with respect to transportation facilities, density of stand, composition of stand, and other factors. Obviously its complete conversion into forest products is governed by the willingness of the public to pay the cost of getting out the more inaccessible and scattered timber.

Availability in the West is illustrated by the State of California. In a study of the timber situation in that state in 1914 the question of accessibility was carefully considered. (*) For purposes of the study, the state, outside of the redwood region, was divided up into three zones of accessibility, in which the logging costs were estimated at $6.50 per M feet or less for Zone 1, $6.50 to $9.50 for Zone 2, and over $9.50 for Zone 3. It was found that 34 per cent of the total stand, both publicly and privately owned, was available at $6.50 or less, 46 per cent at Zone 2 cost, and the balance at Zone 3 cost. In 1914 the average logging cost for 20 representative pine mills in California was $5.24 per M feet. In 1934, however, according to statistics furnished by the Western Pine Association, average logging cost in the pine region of California was $8.61 per M feet, or still within the Zone 2 cost limit of 1914.

The average price received in 1914 by the 20 representative pine mills in California for their product f.o.b. shipping point was $16.08. Although average price figures for 1934 are not available, average prices by species f.o.b. shipping point are reported by the Western Pine Association as varying from about $18 to about $43, with an estimated average for all species in the pine region of California of approximately $25. Thus, the logging cost in 1914 was 32 per cent of the selling price, or substantially the same ratio as in 1934. This indicates that as logging costs increase due to relative inaccessibility, either selling prices increase or the product is sold below cost. Further discussions as to the effects of either of these courses will be found in a later chapter.

Another problem incident to forest management lies in the trend away from lumber as a primary forest product and toward material that can be converted into pulp and then made into a variety of products. Timber difficult to get out in log form may be exploited in cordwood form, which is more suitable for pulp conversion, and at a substantially lower cost than that required for the removal of saw logs.

Of the total saw-timber supply 89 per cent is softwood and 11 per cent hardwood. About 85 per cent of the total cut during the period 1929-1934 was softwood. It is thus seen that the relative demand for softwood and hardwood is in about the same proportion as the supply of softwood and hardwood saw timber. (**)

(*) Smith, C. Stowell, Assistant District Forester, The Lumber Industry in California: an unpublished report of the U. S. Forest Service.
(**) Table V (a) of this report.

Seventy-nine (79) per cent of saw timber is located west of the Great Plains. Of this practically all is softwood. It is strikingly evident, therefore, that the bulk of softwood saw timber is not in close proximity to the centers of population and demand, as is hardwood saw timber. However, the location of softwood on the Pacific Coast makes it possible for producers to take advantage of water transportation through the Panama Canal, with consequent shipping costs low enough to permit considerable back haul by rail from the Atlantic Coast before equaling the all-rail cost overland if the haul were made that way. This favorable freight differential, together with the relatively larger timber and denser stands on the Pacific Coast, has made it possible for Pacific Coast lumber to compete successfully in the East with lumber produced close to points of consumption.

It is not necessarily unfavorable to have timber, the raw material for certain forest products, raised under conditions of maximum growth and at lowest cost and to have the material transported considerable distances to the industries requiring it. The important matter is an adequate supply of suitable material at reasonable cost to the industry or other consumer making use of it.

The Pacific Coast region contains the largest stand of saw timber (62 per cent of the total in the United States). Of this, however, less than three-tenths of one per cent is hardwood. The largest supply of softwood is in Oregon, followed by Washington and California. Most of the hardwoods in the West are found in Oregon.

The next largest stand of saw timber, approximately 12 per cent of the total, is in the South, with 61 per cent softwood and 39 per cent hardwood. The North and South Rocky Mountains come next with a little less than 9 and about 7-1/2 per cent, respectively -- practically all softwood.

The Middle Atlantic region possesses the smallest amount of saw timber, about 1-1/2 per cent, of which 68 per cent is hardwood. The saw-timber supply of the Lake and Central regions is also preponderantly hardwood -- 74 per cent and 91 per cent, respectively.

B. THE PROBLEM OF TIMBER OWNERSHIP AND VALUE

1. Ownership of Entire Forest Area

a. Industrial Ownership

Over one-half of the total commercial forest area is owned by land, lumber, pulp and paper, and mining companies; naval stores operators; railroads; and miscellaneous individuals or agencies. (*)

Industrial forest-land ownership is the predominating type of ownership in the eastern regions, comprising over 60 per cent of all

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(*) Chart I and Table I.

ownership. Eighty-six (86) per cent of the industrial acreage is in the East and 14 per cent in the West. The South contains nearly 50 per cent of the industrial lands of the entire United States. One-third of the total area under industrial ownership is classified as saw-timber area. Because of the large areas of softwood and hardwood forest which were originally culled of softwood alone on account of easy river driving, leaving an essentially unbroken old growth hardwood saw timber forest, over 50 per cent of the New England region is classed as saw timber. In the Lake region less than 10 per cent is saw timber.

Cordwood areas industrially owned in the United States amount to 23 per cent of the total area industrially owned, with about an equal amount of fair to satisfactory restocking areas and somewhat less of poor to non-restocking areas.

The Eastern regions contain 74 per cent of the industrially owned saw timber, 93 per cent of the cordwood, and 90 per cent of the reproducing areas. Although the Western regions contain a relatively small percentage of industrial ownership, that ownership, especially in the Pacific Coast region, is very important because it includes land that is potentially highly productive and also because considerable areas possess virgin stands which are pressing for liquidation. Industrial ownership in the South includes 30 per cent of all restocking lands in the United States. Of this 44 per cent is classified as fair to satisfactory.

b. Farm Woodlands.

Approximately 26 per cent of the commercial forest area consists of farm woodlands. Of this, 95 per cent is in the East, where it constitutes approximately one-third of the Eastern commercial area. In the Central region it includes about one-half, and in the South and Middle Atlantic about one-third of the commercial acreage. Farm woodlands consist of 28 per cent saw timber, 34 per cent of cordwood, and 38 per cent of restocking lands. In the South, where the largest area of restocking farm lands is located, slightly less than 50 per cent is in fair to satisfactory condition. In all other important farm-woodland regions the bulk of the restocking areas are in fair to satisfactory condition, with the exception of the Pacific Coast region, where 54 per cent of such areas range from poor to non-restocking.

c. Public Ownership.

Approximately 20 per cent of the commercial forest area is publicly owned. Of this amount about 90 per cent is owned or managed by the Federal Government, a little less than 10 per cent by the states, and the balance by other public agencies. Eighty-five (85) per cent of public ownership is in the Western regions and includes about 75,000,000 acres of national forest. Acquisition of lands for national forest in the Eastern regions did not start until 1899. The largest area of publicly owned commercial forest land is in the Pacific Coast region, amounting to 34 per cent of the total.

Sixty-three (63) per cent of the total publicly owned area consists of saw timber, 16 per cent cordwood, and 21 per cent restocking area. The greatest publicly owned saw-timber acreage is in the Pacific region, followed by the South Rocky and the North Rocky Mountain regions. The public owns a little over 10 per cent of the total cordwood areas and about the same per cent of the restocking area.

2. Ownership of Saw Timber Stand

a. Industrial Ownership. (*)

Generally speaking, the saw-timber industrially owned is the best and most accessible. It includes 52 per cent of the total saw-timber stand. Sixty-six (66) per cent of the industrial saw timber is in the Pacific Coast region, consitituting 55 per cent of all classes of ownership in that region. The percentage of industrial to all classes of ownership in the various regions is as follows: New England, 82 per cent; Middle Atlantic, 53 per cent; Lake, 61 per cent; Central, 48 per cent; South, 59 per cent; Pacific, 55 per cent; North Rocky Mountain, 27 per cent; and South Rocky Mountain, 8 per cent.

Industrial ownership in the United States as a whole is divided into 86 per cent softwood and 14 per cent hardwood ownership, although in the Eastern regions the ownership is 52 per cent softwood and 48 per cent hardwood.

Next to the Pacific Coast, industrial ownership of saw timber is greatest in the South, accounting for 17 per cent of the total. New England follows with 5-1/2 per cent of the total, and the North Rocky Mountains third with 4-1/2 per cent. The smallest industrial ownership is found in the South Rocky Mountains.

b. Farm Woodland

Of the 7 per cent of saw timber owned by farmers, 55 per cent is softwood and 45 per cent hardwood. The bulk of farm ownership of saw timber is in the East, accounting for 78 per cent of the total. Of this Eastern group, the South leads in farm ownership, with 39 per cent of the total; the Pacific region is next, with 20 per cent; and the Central region third, with 14 per cent.

c. National Forests

The national forests claim 33 per cent of the total saw-timber stand, of which 99 per cent is softwood and 1 per cent hardwood. Ninety-eight (98) per cent is located in the West. The national forests are concentrated in the Pacific region, which holds 65 per cent of the total. The North and South Rocky Mountain regions contain 34 per cent. This leaves only about 1 per cent for the rest of the United States, of which 56 per cent is in the South, 18-1/2 per cent in the Lake region, 17 per cent in New England, 7 per cent in the Central region, and about 2 per cent in the Middle Atlantic region.

(*) Chart III and Table III

d. Other Federally Owned or Managed Forests

Approximately 5 per cent of the total saw-timber stand, largely Indian, is Federally owned or managed in addition to the national forests. It is almost entirely softwood and all but 2 per cent is located in the West. Seventy-six (76) per cent is in the Pacific region, with the balance scattered. New England does not have this type of ownership.

e. State, County and Municipal Ownership

Approximately 3 per cent of the total saw timber is under state, county or municipal ownership. Of this amount, 97 per cent consists of softwood. Ninety-three (93) per cent of the saw timber so owned is located west of the Great Plains -- 62 per cent in the Pacific region; 27 per cent in the North Rocky Mountain region; about 3 per cent in each of the South Rocky Mountain and New England regions; and the balance scattered.

3. Average Stand of Saw Timber per Acre

One of the principal factors affecting the cost of logging is the density of stand, or amount of timber per acre on the forest area. Adverse factors sometimes offset the advantage of dense stand, such as rough topography, swamps, etc., but in general the forests of greatest density can be logged at the lowest costs.

Table IV shows the stand per acre on saw-timber areas. It will be noted that the heaviest stands, 33,127 feet per acre, are found in the Pacific region and are under industrial ownership.

In all classes of ownership the Pacific region likewise leads in density, with an average stand of 23,598 feet per acre; whereas the Central region ranks last, with 1,631 feet per acre. As the Central region contains over 90 per cent hardwood (*) and is located in the heart of a large hardwood consuming section, the conversion of relatively small trees of low yield per acre into saw timber is normally profitable.

The average stand per acre for all classes of ownership throughout the saw-timber area is 8,841 feet. Publicly owned timber lands lead in stand per acre, with 10,893 feet, followed by industrially owned lands, with 9,551 feet, and farm woodlands, with 3,456 feet. The relatively low stand per acre on farm woodlands is probably due to the continuous selective cutting on such lands, partly for farm use.

4. Forest Growth and Drain

a. Forest Growth

In the following discussion computations of growth are based upon past standards of forest products utilization. In the case of saw timber it refers primarily to those species possessing certain physical

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(*) Chart III and Table III

and mechanical qualities which have appealed to consumers, so long as they could be secured at reasonable competitive prices. Future requirements may call to a considerable extent for species which will produce the greatest volume of wood in the shortest possible time. Some of the most rapid growing species, at present considered as "inferior," may well be in the desired class. Accordingly, the growth data given may prove to be considerably below present estimates.

The total current growth of usable material on the commercial forest areas of the United States is estimated to be 8,912,000,000 cubic feet. (*) This is a "net" estimate, which allows for so-called "normal" losses from decay, insects, etc. Abnormal or unusual losses from disease or insect epidemics, fires, hurricanes, etc., are taken care of in the estimates of drain. (**)

Of the total current annual growth the South leads by a wide margin, claiming 54 per cent of the total. This is accounted for by the fact that the South, besides possessing some of the best timber-growing conditions and fastest growing species, contains largely second growth or young timber that is putting on volume at a much more rapid rate than trees in regions containing mature or over-mature forests. The Central region ranks second, with over 12 per cent; the Lake region third, with 7 per cent; and the Middle Atlantic region fourth, with slightly less than 7 per cent.

Softwood accounts for 55 per cent of the total growth, 62 per cent of which is in the South. The Pacific Coast ranks next in softwood growth, with over 7-1/2 per cent of the total, followed by the North Rocky Mountain region with 4-1/2 per cent, and the South Rocky Mountain region with 2 per cent.

The South also leads in hardwood growth, followed by the Central region, the Middle Atlantic, and the Lake region.

The comparatively low growth in the Pacific Coast region, constituting a little less than 8 per cent of the total, is accounted for by the fact that the forests are largely mature and over-mature and hence putting on very little new growth, although that region includes the fastest growing species in the United States. Only by cutting off the mature timber and releasing the land for reproduction can the potential growth capacity of the Pacific Coast region be realized. The same situation applies, but to a lesser extent, to all forests west of the Great Plains.

The total United States saw-timber growth amounts to 11,731,000,000 feet board measure, of which the South has 58 per cent, followed by the Pacific Coast with 15 per cent, New England with 5-1/2 per cent, and the Central region with approximately the same. The Lake region has the smallest annual saw-timber growth, almost entirely hardwood.

(*) Chart IX and Table IX

(**) Table VII

Greatest hardwood saw-timber growth is in the South, or 54 per cent of the total hardwood growth. The Central region is next with 20 per cent, followed by the Middle Atlantic region with approximately 12 per cent, and New England with nearly 9 per cent.

b. Forest Drain

In addition to the supply of available timber, the rate at which it is being removed and reproduced constitutes a major problem of forest management, and is of prime importance in the balancing of forest accounts.

This removal, or drain as it is commonly called, is brought about in many ways, chiefly by cutting for commercial purposes, by fire, disease, etc. For purposes of this report, the average annual drain for 1925-1929 has been used unless otherwise specified, because statistics on average drain for subsequent years are available only for lumber. Obviously, the use of only lumber data would distort drain figures, for lumber comprises more than one-half of the total forest products' drain and the forest products' drain accounts for 89 per cent of the total drain. The years 1925-1929 cover a period of generally expanding business, including the peak lumber production year of the past 24 years. Each of those five years showed a higher production than at any time during the past twenty years, with a few exceptions. Further, there was a general decline in lumber production from 1925-1929 in spite of a general increase in the production of commodities of a competitive nature.

The Lumber Industry has no assurance that in the future the forests will be utilized exactly as in the past. On the contrary, a new conception seems to be forming as to what products should be produced. For instance, clear boards are possibly no more valuable, and perhaps less valuable, than built-up plywood. Such substitution of plywood for clear boards would make presently available mature timber, suitable for veneers, sufficient to supply the demands of a market thirty times as large as the one which now exists for clear boards. Thus, there may be a potential surplus of clear boards. Further, large-dimension timbers can not now successfully compete with steel or reinforced concrete for many purposes.

Clearly, new developments in the utilization of forest products have effected a decreased demand for those products which in the past have formed the bulk of requirements, and at the same time these developments are making available a very much larger volume of raw material than would have otherwise been the case. In brief, any anticipation of what future consumers of forest products will demand must be predicated upon present conditions rather than upon those of the past. Any discussion of forest drain must take into consideration this changing market.

It is common practice in describing the relation of growth to drain to make this comparison without taking into consideration the large supply of standing timber which must in many regions be removed before the full possibilities of growth can be attained. Again, the relationship of gross drain to total stand is frequently stressed without reference to either current annual growth or potential growth. The first prac-

tice overlooks the fact that the production of any commodity is ordinarily governed, so far as financial exigencies will permit, by the amount of stock of raw material in inventory. The second assumes that the forest is static, that it consists only of what can be seen and measured at the present time.

In order, therefore, to give proper perspective to the problem of drain, a comparison of forest-products drain and forest growth in relation to the available stand of timber is here presented. Thus the possible life of our forest resources may be predicted with some degree of accuracy. (*)

The upper half of Table IX (a) shows forest products expectancy, assuming that the lumber drain, other forest-products drain, and drain occasioned by fire, insects, disease, etc., will continue indefinitely at the 1925-1929 rate. The lower half of the table is based upon the assumption that the drain of lumber and other forest products will continue at the 1929-1934 rate; and that fire, insect and disease drain will continue at the 1925-1929 rate. This latter drain should steadily decrease as methods of control are perfected. However, since the rate at which this reduction will proceed is unknown, past experience must necessarily be used.

Considering the entire commercial forest area without regard to the ultimate use or form of its products and assuming no increase in the current annual growth, it is estimated that the average 1925-1929 drain of all forest products can be maintained without total depletion for 65 years in the United States as a whole. However, during this 65-year period, growth will increase as additional growing lands are released by the cutting of mature timber and improved forestry practices are put into effect. (**) On this latter basis it is estimated that growth will exceed drain to such a degree that a perpetual supply of forest products at the 1925-1929 rate of drain will be available, even with a substantial increase in consumption. It should be re-emphasized, however, that this prediction refers to the total volume of wood available for the total volume of wood requirements and not to certain specialized products such as lumber.

As for the saw-timber area only and considering only saw-timber size trees, assuming the 1925-1929 rate of drain, and that growth will continue at its present rate, a 35-years' supply of saw timber, according to current manufacturing practices, is available, varying from a 7-years' supply in the Central region to a perpetual supply in the South Rocky Mountains. Allowing for increased growth as mature forests are removed, however, and applying the same assumptions just cited, there is a sufficient supply for 49 years, with a minimum of 8 years in the Central region.

(*) Table IX (a), Comparison of Forest Products Drain and Forest Growth.

(**) Code of Fair Competition for the Lumber and Timber Products Industries; Forest Practice Rules.

Accepting the above assumptions of drain and growth, it is apparent that a shifting of lumber production from certain regions to others is indicated. This will automatically take place, as it has in the past, as available supplies of saw timber become temporarily exhausted. On the other hand, the conversion of increasing quantities of trees too small for saw timber into products which directly compete with lumber, may occasion a shift to new wood-manufacturing enterprises in certain regions rather than a shift to new saw-timber fields.

The data in the upper half of Table IX (a), based upon the 1925-1929 average drain, is ordinarily taken as an indication of the maximum probable relationship of forest drain and growth to the supply of standing timber or to the inventory of raw material from which forest products are derived. A much sounder analysis is possible from a consideration of the lower half of Table IX (a), in which the probable drain of forest products is estimated to be the average of the 1929-1934 period, with the exception of the fire, insect and disease drain (1925-1929).

The lower half of Table IX (a) shows that on the entire commercial forest area a volume of material equal to the total volume of all forest drains will be annually available for over 700 years, even though no increased growth is taken into consideration. With anticipated increased growth, it appears that nearly twice the 1929-1934 drain can be perpetually maintained.

On saw-timber areas only and considering no increased growth as mature timber is removed, the saw-timber size trees will sustain the 1929-1934 drain for an average of 73 years, with a minimum of 15 years in the Central region. With anticipated increased growth, the supply of saw timber is expected to last 204 years in the United States as a whole, varying from 19 years in the Central region to a perpetual supply in New England, the Middle Atlantic section and the South Rocky Mountains. Before the expiration of 204 years, and if sound forest practice provisions such as were provided in the Code are carried out in the meantime, it can be confidently expected that the forest ledger will be permanently balanced with respect to supply and demand.

In view of this prediction it might well be contended that the timber supply problems of forest areas and forest industries are entirely solved and require no further cooperation between the industries and the public. The problems are not that simple. If liquidation of forest properties existing prior to the Lumber Code were allowed to continue indefinitely, at least some of the following results might be expected during the next few decades, or until the cut-over areas in certain regions had had an opportunity to recuperate:

(1) A shortage in supply of certain of the most desirable species or grades and the necessity of either substituting other species or grades or other materials for them, or going without during the period of adjustment.

(2) A continuation in certain forest regions of the cutting of immature timber during the period of its greatest volume growth, thereby reducing the wood-producing capacity of those regions.

(3) Gradually increasing cost of forest products as the most accessible and best quality material is removed. This in turn decreases consumption and forces a liquidating industry to again reduce its costs through the conversion of only the best or most available material, with a further depletion of the growing stock. Thus a vicious circle is established which makes the competitive problems of the industry more acute, prevents the maximum utilization of the forest resources, and interferes with the economic stability and general prosperity of the entire country.

(4) A shifting of forest industries from locations of scarcity of raw materials to new fields, or their temporary discontinuance.

(5) A further concentration of production on the Pacific Coast and in the South.

It is a basic premise that both the public and the forest industries have an interest in seeing that ample supplies of forest products are continuously available at reasonable prices, and that stability of employment through industry prosperity is maintained. The removal of all possible obstacles to that result is therefore the obligation of both the industry and the public.

Based upon the evidence of migrating forest products industries, rapidly increasing populations and consumption, and a rather sketchy knowledge of potential forest areas, stands and growth, it was but natural that a considerable number of persons, some 35 to 40 years ago, should raise the cry of an impending timber famine which has since largely resulted in the moulding of public opinion and in the fixing of public policy toward forest resources and those industries dependent upon them. It seemed logical that the current rate of consumption of forest products, which had developed during a period when wood was cheap and plentiful and housing and all industry was expanding, should continue indefinitely. The "timber famine" idea caught the popular imagination and was at least partly responsible for the establishment and support of the national forest system and the other Federal and State measures affecting the conservation of timber resources.

In many regions the time at which the timber resources were estimated to disappear has long since gone by, yet forest industries are still much in evidence. The three factors which were eventually largely responsible for dispelling the belief that a timber famine was impending were:

(1) A general, declining lumber consumption during the past two decades, not only per capita but total.

(2) Inaccurate data covering the total available supply of standing timber, the interchange of species for given uses, and particularly the ability of the forests to renew themselves after removal of the mature timber with little and inexpensive assistance from man.

(3) An evolution in the method of utilizing the raw material through its manufacture into veneer and plywood or its conversion first into pulp and then into pressed boards

and other products whereby a greater amount of finished product may be secured from the same volume of timber than if sawn into lumber. (*)

Although any prediction of future forest-products requirements is largely speculative, sufficient facts are available to clearly indicate that a "timber famine" is improbable. This does not mean that reasonable care should not be taken of the present forests and commercial forest areas, both in the interest of the industry and the public, nor that local shortages in supply are not likely to occur temporarily in certain regions. It does mean, however, that the forest problem in the United States as a whole is not one of timber shortage but rather one of proper protection and management of the forested areas, including adjustment of production of forest products between and within the various forest regions, so as to secure the best results from existing forest growing stock. The area now covered with commercial forests and likely to remain available for that purpose is more than sufficient to meet any predictable future demand.

Aside from the prudent conversion of forests, to which the "timber famine" idea specifically applies, there are other and important problems that must be taken into consideration in any national conservation policy. These include the protection of watersheds where forests or other equally or more suitable cover may exert important influences on absorption and run-off; recreation, and the protection of fish and game. Since, however, these values apply only indirectly to the industrial use of forests, and since the industrial forest user is interested in their maintenance no more than is the average good citizen, they do not constitute a part of the present industrial picture.

5. Value of Forests and Forest Land

a. Privately Owned Lands

The total estimated value of land on which the commercial privately owned forests of the United States are standing is a little over $1,000,000,000. (**) On this land is timber with an estimated value of $4,759,000,000, or an estimated land and timber value of about $5,836,000,000.

Land values are estimated at from $2 to $4 per acre, with an average of $2.72; saw timber at from $1.58 to $16.55 per M feet, depending upon species and location; and cordwood at from $0.35 to $1 per cord.

The average softwood value is estimated to be $3.36 per M feet; hardwood $6.34.

(*) If consumption had continued at the 1906 or even at the 1915-1916 rate, and if fire protection had been longer delayed and less readily accepted, a timber famine would have been in sight at the present time.

(**) Table XI

Of the total land and timber value, 33-1/2 per cent applies to forests in the South. The Pacific Coast region comes next with 31-1/2 per cent, the Central region next with a little over 10 per cent, followed by New England with nearly 8 per cent, the Lake region with 7 per cent, and the Middle Atlantic with 6-1/2 per cent. The forests in the South Rocky Mountain region are of least value, being valued at less than 1 per cent of the total.

b. Publicly Owned Lands

It is impossible to estimate closely, from data available, the value of publicly-owned forest lands and timber. Questions of relative accessibility, species, stand per acre and quality of the land itself for other use if the forests were removed, all enter into the picture. However, certain facts are known and from them a general idea may be obtained.

Publicly-owned or controlled lands include an area of 98,659,000 acres. (*) These lands contain 672,636,000,000 feet of softwood and 6,878,000,000 feet of hardwood saw timber (**) as well as 175,424,000 cords of cordwood. (***)

For the purpose of estimate, publicly-owned land values are figured at $2 per acre (****), softwood stumpage at $2.50 per M, hardwood stumpage at $5 per M and cordwood at $0.50 per cord. On this basis the land value would be $197,318,000; softwood timber, $1,681,590; hardwood timber, $34,390,000; and cordwood, $87,712,000; or a total value for publicly-owned land and timber of $2,001,010,000.

Thus, the total value of all commercial forest land and timber, regardless of ownership, is estimated to be slightly less than $8,000,000,000.

6. Stumpage Values

For several years the United States Forest Service, in cooperation with the Bureau of the Census, has been collecting data on stumpage transfers. In some years and in some individual states the volume of such transfers has not been sufficient to accurately determine true values. Accordingly, records for the years 1924-1933 have been averaged to secure estimated stumpage values of softwoods and hardwoods by states and regions. (*****)

(*) Table I

(**) Table III

(***) Forest Service, Department of Agriculture, A National Plan for American Forestry, (1933), Senate Document No. 12, Table 9, p. 188.

(****) On the basis of value for grazing.

(*****) Table X

During that period the total volume of sales reported amounted to 104,784,869,000 feet board measure, for which a total price of $392,097,586, or $3.74 per M feet, was received.

By regions, the highest average price was received in New England, namely, $6.64. The Middle Atlantic was next with $6.55, then the Lake region with $6.35, the Central region with $6.14, the South with $5.43, and the Pacific Coast and North Rocky Mountain regions with $2.97 and $2.96, respectively. Not enough sales were reported from the South Rocky Mountain region to provide a reliable figure.

The downward trend in stumpage value during the past several years is quite marked. (*) During the period from 1928 to 1933 reports of total stumpage sales show that softwood stumpage dropped 27 per cent; hardwood stumpage 32 per cent; and the aggregate sales of both hardwood and softwood stumpage 30 per cent.

The above percentages based, as they are, upon a large volume of sales throughout the timbered states, should be fairly reliable as they iron out the discrepancies appearing in individual state reports. Each stumpage transaction has peculiarities which make averaging difficult. The value of a given block of timber depends upon its location with respect to market, topography, soil and climatic conditions, species, timber stand per acre, and several other factors. Thus, the averaging of softwood and hardwood stumpage sales within individual states and by individual years is subject to considerable criticism.

In a few states, however, the number and volume of stumpage sales have probably been sufficient to justify averaging over a three-year period (**), and these may be considered as representing current values of accessible stumpage.

7. Concentration of Timber Ownership

As a result of the U. S. Senate and House resolutions enquiring about the high price of lumber and the possibility of combinations of lumber manufacturers and timber owners in restraint of trade, the Bureau of Corporations of the Department of Commerce and Labor conducted an investigation from 1907 to 1910. This investigation included the amount of standing timber, timber ownership in important regions and land holdings of large timber owners. (***)

Although the investigation was made about 25 years ago, it is believed that the principal consolidations of timber ownership had been

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(*) Table X (a)

(**) Table X (b)

(***) Bureau of Corporations, Department of Commerce and Labor, The Lumber Industry, Part I, issued January 20, 1913, and Parts II and III, July 13, 1914.

completed prior to that time. Certainly for the past several years, with decreasing stumpage values, the tendency has been to break up large concentrations through sale, often forced, or to liquidate the timber by increasing production.

Considering the industry as a whole, the situation has developed somewhat as follows:

In the beginning the most available timber was converted; that is, timber which was located close to market with low delivery costs, timber of high quality and occurring in dense stands, and timber found under conditions of easy logging and manufacturing. All of this meant low operating costs. The gradually increasing value of stumpage over a long period indicated to speculative lumbermen that this would continue indefinitely. Accordingly, large investments, often far from the then existing market, were made in standing timber which could be retired only through eventual conversion.

As the areas of virgin timber began to fail in availability, new forest areas were opened up farther away from the market, thus increasing the cost of delivery which in some cases became as great as the total of all other delivered costs. Costs were also increased as the industry had to go farther and farther back in rougher country to reach the timber.

Thus the industry was faced with two alternatives -- either to get a higher price for the product or to reduce costs. Both courses were taken. The quality of the product was improved through careful grading and seasoning, which made it more desirable to the consumer. New, lower cost system of logging were employed. In spite of these efforts the increasing cost of holding timber, due to interest, taxes, and other carrying charges, necessitated a price for the product that permitted many substitute materials to successfully compete with it, and made possible the exploitation of young immature timber which had been left behind in previous migrations.

Up to about 1921 to 1923 lumber prices were generally appreciating, and thus compensating in part for gradually increasing costs. About that time, however, the competition of other materials became acute, with the result that lumber prices could no longer be maintained. Furthermore, stumpage values began to decline for the first time in history. Thus, many units of the industry faced with steadily mounting carrying charges found themselves forced to a policy of liquidating their surplus supply of timber almost regardless of cost. Up to the time that the Lumber Code became effective this policy was generally in effect.

The above outline of industry development covers only the general long-time trend. There were many deviations from it. For example, whenever a satisfactory price situation was attained, new manufacturing facilities would enter the production field, and existing ones would be increased in capacity. Over-production would then inevitably follow with a resultant price drop, thus forcing the high-cost operations to close down, and stay down, until curtailed production and increased prices again permitted them to compete.

All of these factors have played a part in removing the incentive to large concentrations of ownership.

In view of the above facts the conclusions of the Bureau of Corporations are of little present application, although its findings covering concentration were of interest in showing how mistaken the Lumber Industry and the public may be in predicting future economic trends.

The Bureau found that at the time of its investigation two railroads and their subsidiaries, through land grants, and one timber company, held nearly 11 per cent of the estimated total privately-owned timber in the United States. A large amount of the railroad timber has since come back into public control. It was estimated that the above holders, together with five others, held over 15 per cent of the total private timber.

In California, Oregon, Washington, Idaho, and Montana, it was estimated that 37 holders owned approximately one-half of the privately-owned timber in that region.

In the South it was estimated that 67 holders owned 39 per cent of the long leaf pine, 29 per cent of the cypress, 19 per cent of the short leaf and loblolly pine, and 11 per cent of the hardwoods.

In the Lake States it was estimated that 215 holders owned 65 per cent of all the timber.

No records are available to determine the present degree of ownership concentration, but experience during the past several years has shown that it is not now a material factor in the economic problems of the industry.

C. THE PROBLEM OF HOLDING TIMBER LAND

The cost of holding timber land includes administration, interest on money borrowed to acquire the land, fire and other protection expenditures, and taxes. No data are available on administrative costs, and are incomplete on the balance. However, it is possible to roughly approximate the theoretical annual burden on the forest products industries through their saw timber and saw timber holdings, as follows:

Interest on indebtedness	$ 63,122,835.00
Fire protection	2,541,391.15
Taxes	40,470,862.00
	$106,135,088.15

The Lumber Industry obviously does not pay the annual bills for all forest products industries. However, it produces approximately 50 per cent by volume of all forest products (*) of every kind. Moreover, it is common knowledge that, as compared to most other forest products industries, the Lumber Industry carries a considerably larger reserve

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(*) Table VIII

supply of timber to justify its plant and railroad investment. Therefore it seems safe to assume that it should stand at least 75 per cent of the expense of holding the privately owned saw-timber area. On that basis its annual burden would be:

Interest on indebtedness	$47,342,126.25
Fire protection	1,906,043.36
Taxes	30,353,146.50
	$79,601,316.11

Since conversion of timber into lumber must, in the long run, be relied upon to meet the carrying charges, this annual cost, if charged to lumber production per M feet would be:

Based upon 1934 production	$5.14
Based upon average 1929-1934 production	4.01

The bases for these estimates are developed in the following sections:

1. Interest

The largest cost involved in holding timber consists of the interest on the money invested in it. With a total stand of privately owned saw timber amounting to 988,289,000,000 ft. b.m. (*), and valued with the land at approximately $4,208,189,000 (**), interest at the rate of 6 per cent would amount to $252,491,340 annually.

It may be contended that interest represents profit on the investment and, therefore, has no place in the cost of holding timber and timber land. This might be conceded if the privately owned timber land was paid for. However, that is not the case and the interest on money borrowed to acquire and convert it has to be paid through conversion in the long run.

Studies made in California and the Southeastern States in 1914 (***) show the following relationship of indebtedness to total investment:

Region	Number of Operations	Total Investment	Total Bonded or Other Indebtedness	Per Cent of Indebtedness to Total Investment
California Pine	12	$ 19,248,014.32	$ 9,029,672.48	46.9
California Redwood	18	38,691,393.63	17,139,710.30	44.3
Southern Pine	108	137,476,360.63	52,629,210.63	38.3

(*) Table III
(**) Table XIII
(***) U. S. Forest Service, The Lumber Industry in California, and Timber Ownership and Lumber Production in the Southern Pine Region; unpublished reports.

The above figures, representing probably the largest and most important operations in the regions studied, indicate that a substantial portion of the money invested in the enterprises in 1914 was borrowed.

A considerable portion of this consisted of bonded indebtedness incurred largely for the purpose of acquiring timber and to extend short term obligations over a period of years. Such bonds were sold with the provision for a sinking fund to retire them within the specified period. Usually from $2 to $3 per M feet cut (log scale) and to be laid aside for a sinking fund. Bonds carried 6 per cent interest as a rule and sold at from 90 to 98, thus making the actual interest obligation 7 per cent or over. Short term notes sometimes bore interest at 10 per cent or more.

It is thus shown that in 1914 the larger operators in the United States were carrying a debt varying from 38 to 47 per cent of their total investment. The condition of the small operators is unknown, but there is no reason to believe that they were in a substantially different position except that their obligations were generally short term and their interest rates correspondingly higher.

Statistics of Income from the Bureau of Internal Revenue for 1933, covering 6,161 producers of forest products, show that bonded debt and mortgages amounted to only 17 per cent of the depreciated and depleted capital assets. No data are available to show other possible liabilities against the capital assets, nor is there information on interest rates now prevailing on indebtedness. Accordingly, for the purpose of this discussion, certain assumptions are necessary.

The first is that 25 per cent of the present total investment in saw-timber lands consists of indebtedness. The second is that this indebtedness bears at least 6 per cent interest. The third is that the Lumber Industry pays the bill on 75 per cent of the saw-timber lands. On this basis the annual interest charge against the Lumber Industry would be $47,342,126.25 or $2.38 per M feet on the 1929-1934 production.

2. Fire Protection Costs

Since public and privately-owned forest lands in certain regions are intermingled or adjacent, it is often impractical to protect one class without protecting the other. Accordingly, there has developed the cooperative system financed jointly by both public and private interests, with the benefits spread over all lands included. In addition, there are large blocks of public and private forest lands not so situated that the cooperative plan is feasible. These may be protected by the particular interest involved. Frequently, in addition to cooperative expenditures, both public and private agencies spend substantial amounts in order to strengthen the protection of their own lands.

Forests are not always found in solid blocks, but frequently include grazing and other types of land. As fires are no respectors of boundary lines, for the purposes of this report the protection of such included lands is considered a necessary and proper part of the whole protective effort.

The total annual expenditure for fire protection, both prevention and suppression, is approximately $16,400,000, (*) or one cent per M feet on the total stand of saw timber in the United States regardless of ownership. Of this, $9,049,077.49 is spent by the Federal Government direct to protect National Forest, Indian, and National Park lands. The bulk of this effort is in the West where the largest areas of such lands are located. The largest expenditure is in the Pacific region, 33 per cent of the total, followed by the North Rocky Mountain region, with 22 per cent, and the Lake region with 14 per cent.

Outside of these straight Federal expenditures for the protection of Federal lands, there is spent annually for cooperative fire protection approximately $6,000,000. Of this the Federal Government contributes 32 per cent; the States 48 per cent, and private timber land owners the balance. This cooperative effort covers privately-owned, State, and some Federal lands on the theory that only through a pooling of resources can a satisfactory job be accomplished and the public interest in all forest lands, regardless of ownership, be safeguarded. Such cooperative effort is administered by the States. In addition, private owners spend approximately $1,300,000 for the more intensive protection of their own lands, thus making available approximately $7,400,000 annually for the protection of private and State lands.

Of this amount 31 per cent is spent in the Pacific region alone, 19 per cent in the Lake States, 15 per cent in the South, 11 per cent in the Middle Atlantic region, 11 per cent in the North Rocky Mountain region, and 8-1/2 per cent in the New England region. Less than 1 per cent is spent in the South Rocky Mountain region.

Charging the entire fire protection expense, outside of straight Federal expense, to the average lumber production of 1929-1934, gives an average annual charge per M feet of $0.37, varying from a maximum of $2.84 in the Middle Atlantic region to a minimum of $0.07 in the South Rocky Mountain region. It is obviously incorrect to charge the entire cost of private and cooperative fire protection on State and private lands to the Lumber Industry, since other forest products industries participate to a considerable extent in some regions. Nor is the fact that lumber constitutes only approximately 50 per cent of all forest products produced a safe guide, since the Lumber Industry is better organized, holds more forest land, and generally cooperates to a greater extent in any fire protection movement than most forest industries. It is therefore assumed that 75 per cent would better represent the Lumber Industry's stake in the fire protection effort. On that basis, the cost per M feet produced (average 1929-1934) would be $0.28, varying from a maximum of $2.13 in the Middle Atlantic region to a minimum of $0.05 in the South Rocky Mountain region.

If charged against the stand of saw timber industrially owned, the annual cost of the present fire protective effort (private and cooperative) would be about 8 mills per M feet for the United States as a whole, varying from 2 mills in the South Rocky Mountain region to $0.135 in the New England. If charged against the total saw timber stand privately owned, which includes industrial and farm ownership, the average per M feet for the United States would be 7 mills, varying from 2 mills in the South Rocky Mountain region to $0.068 in New England.

(*) Table XI.

Since the forest products industries annually pay $2,541,391.15 of the total private and cooperative expenditures of approximately $7,400,000, and since the Lumber Industry's share is assumed to be 75 per cent, its annual expenditure would amount to $1,906,043.36, or $0.096 per M feet on the average 1929-1934 production.

The U. S. Forest Service estimates that complete and adequate protection for State and private forest area will cost $13,381,100. annually. This would involve protection of 209,557,738 acres in addition to the 280,422,032 acres now protected.

The proportion of protected to unprotected State and private forest areas and the degree of present protection vary widely in different forest regions. Thus in New England the entire State and private forest area is under some sort of protection, and the forest industries and the Federal and State agencies are spending approximately $641,453.48 annually, or 81 per cent of the $792,000. estimated to be needed. However, in Massachusetts and Rhode Island more money is being spent for fire protection than is believed absolutely necessary in comparison to the other States.

In the Middle Atlantic region, where nearly 1,430,360 acres of State and private forest land are still unprotected, approximately $808,000. is being spent as against needs for $955,000., or a coverage of about 84 per cent. The amount of private expenditure in this region is relatively small.

In the Lake region as a whole, where all State and private forest areas are protected to some extent, expenditures are 82 per cent of the amount needed, although in Wisconsin slightly more than the required amount is being spent, whereas Minnesota is considerably short of its needs.

In the Central region over 65 per cent of the State and private forest area is unprotected, and only 16 per cent of the amount needed is being spent for fire protection.

In the South, where only 32 per cent of the State and private forest area is protected, the per cent of actual to estimated required expenditures is only 20.

In the Pacific region, where fire risk is very great and where most of the State and private forest area is under protection, the annual expenditures for fire protection are estimated to be approximately $2,275,159.02, as against $2,135,000. needed. Over 60 per cent of the total is paid by private agencies. In Oregon and Washington more than the estimated amount required is being spent.

In the North Rocky Mountain region, another region of high risk, where approximately 95 per cent of the State and private forest area needing protection is protected, private expenditures are over one-half of the total expenditures for fire protection. Total expenditures are approximately 125 per cent of the amount estimated to be needed.

In the South Rocky Mountain region, with only a nominal fire risk, about 80 per cent of the State and private forest area is being protected. In this region only $44,100. is considered necessary for adequate protection, or less than the amount required for most individual states. About one-half of the required amount is being spent.

3. Taxation

The annual burden of taxation on mature standing timber is one of the most important single factors in stimulating the sale or cutting of timber and proportionally influencing the manufacture of forest products without due regard to current market demand. Upon the solution of this problem substantially depends the present and future security of ownership of privately owned timber as well as the maintenance of reasonable balance between production and consumption.

Late in 1931 the Secretary of the Timber Conservation Board requested the opinion of the members of its Advisory Board on the subject of the timber taxation. (*) The Advisory Board was composed of 22 leading authorities on the subject, including foresters, economists, educators, conservationists and executives. To the question as to whether state and county taxation had become a sufficiently heavy burden in enough regions and instances to be an important factor in determining ownership and management plans for mature timber, all answers directly received were in the affirmative.

To the question as to whether taxation had in any important degree already hastened cutting undesirably, from an industrial or community viewpoint, the replies were in the affirmative, although two members emphasized the local rather than the national effect.

In January, 1932, the National Lumber Manufacturers Association addressed a questionnaire to prominent lumber producers throughout the United States for the purpose of determining the effect of taxation upon lumber production. (**)

The questions were:

First: "Do you think taxation is in any important degree the cause of hastening timber cutting undesirably from an industrial or community viewpoint?"

Seventy-three operators answered unqualifiedly in the affirmative. One answered "No", one "Not in this section", and one "Difficult to say."

Second: "Have you put any timber into production in order to carry taxes?"

Forty-five operators answered "Yes", and 27 "No." Two operators answering "No" stated that they owned no timber.

(*) Timber Conservation Board; Taxation Questionnaire (1931)

(**) Table XIII (a)

Third: "How much capacity to produce have you added?"

Of the replies received, 19 indicated increased capacity and in several cases specified the amount.

The above cross-section of industry and public opinion is sufficient to indicate the seriousness of the existing tax system in its effect upon the handling of privately-owned timber lands. In addition to the current and known tax burden, the uncertainty of the future offers little encouragement for timber-land owners. This is illustrated by Table XIII (b) and the following summary based upon reports from 32 lumber manufacturing companies owning timber and producing lumber during each of the three years 1909, 1919 and 1929.

			Taxes				
Year	Total Timber M ft. b.m.	Total Production M ft. b.m.	Gross	Per M ft. Owned	Per Cent Increase from 1909	Per M ft. Cut	Per Cent Increase from 1909
1909	44,504,507	2,051,169	$ 856,136.47	$.019	---	$.417	---
1919	37,315,164	2,177,278	2,273,312.31	.061	221	1.044	150
1929	30,719,042	2,343,737	2,799,205.80	.091	379	1.192	186

The ratio of increase since 1929 is not known. At any rate the owner of timber land faced with a possible tax increase of from 200 to 400 per cent every 20 years is hardly justified in withholding such land from conversion indefinitely, particularly since stumpage has shown a consistent decline in value during the past several years. (*)

The estimated present annual tax burden on commercial privately-owned forests is $58,356,675. (**) This applies to 396,239,000 acres with an estimated land value of $1,077,169,000; saw timber amounting to 988,289,000,000 feet board measure and 926,719,000 cords of cordwood, together valued at $4,758,498,540; or a total for land and timber of $5,835,667,520. Land values, without timber, are estimated at an average of $2.72 per acre, varying from $2 to $4. Unit stumpage values (***) averaged $3.40 per M for softwood and $6.05 for hardwood.

The timber of highest value is found in the Pacific region, namely, $1,771,472,580. The South is next with $1,397,661,450. and the South Rocky Mountain region last with $24,150,600.

(*) Table X (a)
(**) Table XII
(***) Table X

The ratio of assessed to total value varies from a high of 96.6 per cent in Wisconsin to a low of 12.7 per cent in Iowa.

The total estimated assessed value of $3,313,398,247. is based upon the total estimated land and timber value for each state multiplied by the ratio of assessed to total value for that state.

The highest assessed value of land and timber is in the South, $998,073,936., followed by the Pacific Coast region with $937,388,826., the Central region with $381,526,562., and the Lake region with $354,815,452.

On the basis of an estimated one per cent tax on total value, the South pays the largest timber land and timber tax bill, amounting to over 33 per cent of the total, followed by the Pacific Coast with a little over 31 per cent, and the Central region with a little over 10 per cent. The South Rocky Mountain region pays less than one per cent.

The estimated current annual tax burden on commercial privately-owned saw timber areas is $40,470,862. (*) The maximum is in the Pacific Coast region, 41 per cent, followed by the South with a little over 31 per cent, New England with about 9 per cent, and the Central region with slightly less. Thus the Pacific Coast and the South pay approximately 70 per cent of the total tax bill on commercially-owned saw timber areas.

Charging the entire tax burden of $40,470,862 on commercial privately-owned saw timber areas to the Lumber Industry would mean $2.04 per M feet produced (average 1929-1934). Assuming, however, the same relationship in obligation between the Lumber Industry and the other forest products industries as in the case of interest and fire protection costs, namely 75 per cent, its annual tax bill per M feet produced would be:

Based upon 1934 production 1. .....$1.96
Based upon the average 1929-1934 production ...$1.53

D. PRE-CODE EFFORTS AT CONSERVATION

It is well to reiterate that both the public and the forest products industries have an important stake in conservation. The public wants a plentiful supply of various forest products at reasonable prices. It also desires permanent and prosperous forest industries which will provide stable employment. In addition, it wants its soil and navigation safeguarded through watershed protection, its fish and game supply fostered and increased, and a reasonable area of forest lands kept in forests for recreational purposes. The forest products industries are interested primarily in the perpetuation of their supply of raw material, but at a reasonable cost and in location, form and volume most attractive to the buying public.

The operations of the forest products industries in the past have been neither conducive to stability of employment, nor to the protection

(*) Table XIII.

values other than those affecting their immediate timber supply. Such protection as was given was usually confined to the time necessary to retire a specific forest investment. Forests were so plentiful that the cutting out of a given locality simply meant moving to a new one. Thus there developed the general idea that forest industries were no more permanent than mines, oil wells, or other industries based upon non-renewable products. Forest labor was largely itinerant and seldom remained long at one operation, regardless of its permanency.

As the forest industries moved farther away from their markets and as costs of delivery correspondingly increased, leaders in the industries began to realize that timber was possibly not inexhaustible, at least such timber as could be converted at a cost low enough to assure its use in large volume in competition with its various substitutes.

The public also developed increasing interest in the future of its wood supplies, as evidenced by the establishment of forest schools and various public agencies for the purpose of studying the forest problems and assisting in their solution. In this movement the Bureau of Forestry, U.S. Department of Agriculture (now designated Forest Service) assumed leadership. Probably no other natural resources have received the same amount of consideration and the same amount of planning as to what should be done about it as have the forests. All of this study and discussion has resulted in a clearer understanding of the public and industry problems involved and the development of a long-time program for solving them.

Measures taken to meet the situation prior to the Code of Fair Competition for the Lumber and Timber Products Industries are as follows:

1. Public

The first major development in forest conservation in the United States dates from 1891, in which year Congress authorized the President to set apart as public reservations such of the public lands as contained timber or undergrowth. As a result of this authorization, together with later legislation permitting exchange and purchase, approximately 165,000,000 acres of national forests have been set aside under management of the Forest Service, U. S. Department of Agriculture. These lands are not reserved in the sense that the resources are locked up. On the contrary the Government policy is to permit their use, but under such conditions that their renewable resources, such as timber and forage, will be increased in volume and quality to the full capacity of the land.

In addition to the national forests, approximately 11,700,000 acres of timber and wood land are found on Indian reservations under the jurisdiction of the Commissioner of Indian Affairs, Department of the Interior. These lands are handled in substantially the same manner as the national forests -- that is, to improve while wisely using the resources.

The National Park Service, under the Department of the Interior, also has jurisdiction over approximately 15,000,000 acres of public lands, of which slightly less than one-half is timbered. The timber resources on

these lands are kept in as nearly a natural state as possible without regard to maximum growth. They are not subject to exploitation.

In addition to the Federal Government, several states have set aside or purchased considerable areas of forest land which, outside of parks and other special use areas, are managed under policies somewhat similar to those of the Federal Government. Nearly 16,000,000 acres of forest lands are estimated to be under state control.

2.. Private

The problem of forest conservation by private timber and timber land owners has generally encountered insuperable difficulties. These have long been recognized by the forest products industries and to some extent by the public. The objective of keeping all timber lands, both private and public, in a high state of productiveness is fully endorsed by leading members of the forest industries, and they have been willing to assume their full share in a broad program of national forest conservation. However, many of them have felt that alone this could not be accomplished on most of the privately-owned forest area.

The condition of the Lumber and Timber Products Industry may be briefly summarized as follows: (a) A top-heavy investment in standing raw material -- approximately $6,000,000,000 worth of land and timber and an unknown amount in plants, railroads, etc.; it is inconceivable that this investment under its present and increasing load of carrying charges can be retired without severe loss to capital assets; (b) a manufacturing capacity far in excess of reasonable market consumption resulting in recurrent periods of over-production and low prices; (c) a drastic reduction of market requirements due to a decline in domestic use of wood and increasing restrictions in foreign trade.

To better its financial situation, leaders in the industry have from time to time explored the possibilities in consolidation and in cooperative control of certain important factors affecting it, such as production or prices, but without material success. The first failed from lack of adequate finances and the second from lack of assurance from Federal and State authorities that the cooperators would not be held liable under State and Federal anti-trust laws. The only assurance possible to get from Federal agencies has been that the legality or otherwise of a suggested course of industry action would be considered after and not before the action had been taken. Under such circumstances few industry leaders were willing to jeopardize their investments or reputations by subscribing to any effective price or production control plan.

The result has been unrestricted competition between producers of single species or similar products within a region, competition between different producing regions, and competition of all regions with other materials.

As an illustration of the Lumber Industry's current situation, the record of lumber consumption is illuminating. In 1906 the visible consumption was approximately 45,000,000,000 board feet, or over 500 feet

per capita. In 1926 it had dropped to 38,000,000,000 board feet, or a little over 300 feet per capita, and in 1932 it had dropped to 12,000,000,000 board feet, or 95 feet per capita.

In 1926 the number of wage earners engaged in primary conversion was approximately 455,000 as compared to slightly over 155,000 in 1932. In order to keep costs down and remain in business, long hours of operation and low wage scales were inevitable in some producing regions. As a result of competition, laborers in one section of the country received for a long day's work a smaller wage than did laborers in another section for one hour's work.

In the past the Lumber Industry had usually been considered as a so-called "wasting" industry because the forests had persisted for nearly three centuries without economic necessity for replacement. Only in close proximity to markets capable of using lumber derived from second growth trees had it been feasible to establish permanent forest enterprises based upon timber regeneration. Forest management had generally meant protection of mature stands, and the young growth had possessed no demonstrable value except in a few localities accessible to markets which could absorb low-grade material from second growth stands.

Forest ownership is divided roughly as follows: About 50 per cent of the mature saw timber is owned by industrialists, over 7 per cent by farmers, and 38 per cent by the Federal Government. Most of the cut-over land not needed for agriculture is privately owned, although from 50,000,000 to 75,000,000 acres may return to public ownership through tax delinquency. Over 50 per cent of the cut-over area is fairly to satisfactorily stocked with growing forests and capable of producing annually more lumber than was cut in 1934.

Recognizing that fire is the greatest single menace to forest replacement, and that adequate control of fire will solve one of the major problems of forest management, the forest products industries have vigorously advocated fire protection and have cooperated with the State and Federal authorities financially and otherwise to secure it. Toward this whole protection effort on private and state forest lands, including cooperative and private non-cooperative expenditures, private interests spend nearly 35 per cent, the states 39 per cent, and the Federal Government the balance.

In 1934 over 65 per cent of the private and state forest lands believed by the U. S. Forest Service to be in need of protection were receiving it, varying in degree from practically 100 per cent coverage in New England, the Lake State and Pacific regions, to a little over 30 per cent in the South and Central regions. Of the amount necessary, in the opinion of the Forest Service, to secure adequate protection, approximately 55 per cent is now being spent annually. In the Pacific and North Rocky Mountain regions, where the heaviest stands of mature timber are found and where the fire risk is very great, more than the amount necessary to do a good job is now being spent. Of the total, private interests put up approximately 60 per cent. In the Central region and the South the lowest ratios of actual to required expenditures are found, namely 16 and 20 per cent.

In spite of the uncertainties in the long-time holding of timber lands such as unpredictable carrying charges, fire and other risks and uncertain future markets there has been a considerable effort on the part of the forest industries to practice forestry. A survery conducted by a Committee of the Society of American Foresters in 1930 showed that 288 companies and individuals, each owning tracts of more than 1,000 acres, were making conscious efforts to grow timber commercially upon nearly 30,000,000 acres of forest land. Forty of these had put their holdings on a sustained yield basis. (*)

Such was the situation on June 16, 1933 when the N.I.R.A. was approved and the Lumber and Timber Products Industries were invited to submit to the Federal Government a plan, the objectives of which were to include the rehabilitation of those industries, conservation and sustained production of forest resources, sustained yield forest management, and permanent sources of forest products employment.

E. CONSERVATION UNDER THE CODE

At a general meeting of the Lumber and Timber Products Industries on July 1, 1933, the outline for a Code of Fair Competition was submitted for consideration by representatives of the National Lumber Manufacturers Association, the largest and most important federation of forest industry groups. In presenting the tentative code, it was pointed out that the industry could not permanently thrive while destroying or witnessing the destruction of the sources of its own livelihood, and that no rehabilitation would be either complete or lasting which did not effectuate the protection and maintenance of the forest resource itself. It was further stated that although the unsatisfactory forest situation might be largely due to past unwise land policies and present unwise state timber taxation policies, which contributed largely to existing destructive competition, the remedy was beyond the combined forces of the Federal Government, the State Governments and the forest owners and industries. It was then suggested that the NIRA afforded the forest products industries an opportunity, through public cooperation, to establish effective standards for dealing with the problems of occupancy and administration of forest lands and forest resources.

(*) During the Code period only 10 concerns were granted extra allotments for being on a sustained yield basis in accordance with the Code provisions. However, a considerably larger number of applications were in process of examination at the end of May, 1935. It is undoubtedly a fact that a large number of operators who were actually on a sustained yield basis declined to make application for various reasons, including the following:

(1) Unwillingness to bind the corporation indefinitely into the future by action of the Board of Directors, as committed to appermanent sustained yield policy.

(2) Unwillingness to spend the necessary money for technical services to make forest examination and prepare management plan.

(3) Fear of imposition of higher local taxes following acknowledgment of use values resident in cut-over lands and reproduction.

(4) Necessity of retaining the right to cut heavily in over-ripe stands and stands menaced by insects, diseases, etc.

(5) Inability to qualify as eligible because of financial limitations or impairments.

As a result of this meeting a "Lumber and Timber Products Industries Code" was submitted to the President by the National Lumber Manufacturers Association, acting in behalf of 48 associations representing almost the entire national range of timber products industries which, after public hearings, was approved by the President on August 19, 1933.

This Code declared among other purposes, "and to conserve forest resources and bring about the sustained production thereof." Article X provided for the conservation and sustained production of forest resources as follows:

> "The applicant industries undertake, in cooperation with public and other agencies, to carry out such practicable measures as may be necessary for the declared purposes of this Code in respect of conservation and sustained production of forest resources. The applicant industries shall forthwith request a conference with the Secretary of Agriculture and such State and other public and other agencies as he may designate. Said conference shall be requested to make to the Secretary of Agriculture recommendations of public measures, with the request that he transmit them, with his recommendations, to the President; and to make recommendations for industrial action to the Authority, which shall promptly take such action, and shall submit to the President such supplements to this Code, as it determines to be necessary and feasible to give effect to said declared purposes. Such supplements shall provide for the initiation and administration of said measures necessary for the conservation and sustained production of forest resources, by the industries within each Division, in cooperation with the appropriate State and Federal authorities. To the extent that said conference may determine that said measures require the cooperation of federal, state and other public agencies, said measures may to that extent be made contingent upon such cooperation of public agencies."

Article VIII, which refers to control of production, provided:

> "(i) The Authority may modify, or cause to be modified, production quotas and allotments determined hereunder, and the bases therefor, in such manner and to such extent as may be necessary to effectuate the purposes of the Code in respect of the conservation and sustained production of forest resources.
>
> "(k) The Authority, as promptly as practicable after its action pursuant to Article X hereof, shall submit for the approval of the President appropriate changes in the basis of allotments."

Immediately after approval of the Code by the President, the National Lumber Manufacturers Association, on behalf of the forest products industries affiliated for that purpose, requested a conference with the Secretary of Agriculture to lay before him proposals for effectuating the purposes of Article X. In the meantime, at the joint invitation of

the Secretary of Agriculture and the Lumber and Timber Products Industries, the Pulpwood Industry, the Naval Stores Industry and the owners of farm woodlands were invited to participate in the proposed conference through their various organizations.

With their request for a conference, the forest industries submitted to the Secretary of Agriculture a complete program for industry and public action, and in doing so emphasized the belief that the purposes of the conference would not be served by a review of past conservation history but rather with a consideration of the present and the future, and the hope was expressed that public agencies would join with industry in the planning and establishment of permanent productive forest industry.

The Secretary of Agriculture issued a call for a conference. The first session was held on October 24-26, 1933 and was participated in by delegates representative of the regional divisions of the industry and of public agencies, including Federal, State and other conservation agencies. The Secretary of Agriculture was represented by the U.S. Forest Service, which took leadership in representing public agencies. The purpose of the first session was to formulate a preliminary conservation program to be submitted to the regional agencies of the Lumber Industry for critical analysis and suggestions prior to adoption of a final program at a later session. Initial deliberations were on proposals submitted by both public and industry representatives. In order to facilitate discussion and the forming of conclusions appropriate committees made up of public and industry members of the conference were designated to deal with various subjects. The reports of the committees were laid before the general conference, freely discussed and acted upon by a vote of the whole conference.

Following the first session of the conference the proposals as adopted were submitted to the regional agencies of the industry for their further study and recommendations and with instructions that each regional agency prepare rules of forest practice applicable to its region for presentation at a later conference. So similar were the proposals of industry and the public on forest practices that an executive committee was provided and instructed to reconcile the proposals into a joint statement. This statement was later submitted to the regional divisions of the industry.

In recognition of the immense task of preparing regional reports and formulating regional rules and regulations of forest practice, the second session of the Conference was not called until January 25, 1934, Representation at this session was the same as on October 24-26, and the subject matter was handled through the same committees, with all reports and recommendations finally acted upon by the general Conference.

With notable unanimity the Conference representatives agreed upon a well-defined plan of procedure to accomplish the objectives of conservation and sustained production of forest resources. The program called for definite action on the part of the Lumber Industry in the prompt initiation and administration of forest practices designed to promote the conservation of its resources; it called upon the States and the Federal Government for a cooperative program of public action in respect

to forest protection, public timber disposal, public acquisition of forest lands, forest credits, forest taxation, forest research and other aspects of the forest problems involving public responsibilities.

1. The Private Forestry Program

On February 26, 1934 at a Public Hearing there was presented and approved a schedule of forest conservation rules based upon the Conference findings and officially recommended and adopted by the Lumber Code Authority and unofficially approved by the Secretary of Agriculture and his representatives. As a result of this hearing the National Recovery Administrator submitted the recommendations applying to industry to the President on March 21, 1934 and they were approved by him on March 23, 1934, becoming amendments to Articles X and VIII of the Lumber Code and designated as Schedule C.

The declared purpose of the amendment to Article X was to conserve and sustain forest growth. This was to be accomplished in several ways: First, by improving logging methods so as to conserve young growth and, where possible, to leave part of the original stand, and by the intensification of forest protection. A long-time goal was the orderly transformation of the industry from a quick liquidation basis to sustained yield. The industries subscribing to the Lumber Code declared this to be an industry undertaking, and public representatives agreed that it should be aided by a broad program of State and Federal legislation to remove certain economic obstacles and to aid in research.

The amendment to Article VIII provided that persons securing their raw material from forest lands operated on a sustained yield basis might, upon securing the necessary certificate to that affect from the Code agency under whose jurisdiction they were operating, have their production quota as allocated under Article VIII increased by 10 per cent.

In submitting these amendments to the President for approval, the Administrator said:

> "From the testimony taken at the hearing, it is apparent that these amendments represent a tremendous step toward the establishment of effective mechanism necessary to carrying out a successful program of conservation and sustained production in one of the nation's most important natural resources. As you know so well, the means of embarking on such a program has long been sought in this country, but the divergent interests involved, while seeking a common goal, defeated each other in its attainment by failing to reconcile their opinions in the matter of detail. In the light of this knowledge, the unanimity of opinion supporting these proposals revealed at the hearing can only be regarded as promising much in future achievement. That this reconciliation has been possible is undoubtedly due more to your interest and leadership than to any other force."

Immediately following the approval of these amendments there were set up under the Lumber Code ten administrative agencies to formulate local rules of forest practice, and to administer locally the provisions of both amendments. Each division or subdivision agency consisted of one or more committees, composed of industry men and having as advisory members representatives of the State Forestry Departments and the United States Forest Service. Rules of forest practice suitable to local conditions were formulated, approved by the Lumber Code Authority and, in the absence of disapproval by the Administrator, became effective June 1, 1934.

Production control, to be effectuated by a mechanism specifically set up in the Lumber Code, promised to correct one immediate economic ailment of the subscribing forest industries, and at the same time it was recognized as offering a basis for the permanent encouragement of sustained yield forestry.

The subscribing industries now undertook to do three things: (1) to change over gradually, but as rapidly as possible, from quick liquidation to continued forest production; (2) improvement of woods practices and general strengthening of forest protection upon all lands, particularly those being logged, which was to be accomplished by the forest practice rules; (3) a broad program of study to improve logging practices, encourage selective cutting and to train technical personnel, which was to be undertaken in cooperation with organized public agencies.

Direction of conservation in the divisions was handled by 25 technically trained foresters. The United States Forest Service organized a staff of approximately the same size, chiefly specialists in economic study and men with considerable experience in contact with the industry, to cooperate. At the end of the first year of application of Article X to the woods (June, 1933 - June, 1934) approximately 60 per cent of all operations were estimated by the Code Authority to be fully complying with the forest practice rules, and an additional 30 per cent were complying in part. Definite progress had been made in fire protection.

Prior to the Code the largest holders of timber land were well aware of the over-supply of timber, the over-capacity of the mills, and the chronic over-production of the Lumber Industry. However, nothing effective could be done about regulating production to demand on account of legal restrictions against cooperative action to that end, and the thousands of small producers that could not be controlled even if there had been no legal objection.

During the Code period it was found that the larger operators were interested in and anxious to observe the forest practice rules, and the colossal task of educating some 27,000 operators was well under way. It was impossible, however, to discover all of the scattered small operators--even those who came under the jurisdiction of the Code. If they had been found and educated as to their privileges and obligations, the problem of Code effectiveness would still have remained unsolved, owing to the fact that farmers, owning 12-1/2 per cent of all the saw timber in the United States and in many instances producing forest products for the

general market, were specifically exempt from its provisions. In addition, the important forest-using groups producing pulpwood, distillation wood, mining timbers, etc., not subscribing to the Lumber Code were entirely outside the scope of Article X and its amendments. This was a serious disadvantage.

The Administration, as well as the Lumber Code Authority, recognized the difficulties involved in this situation through lack of suitable forest practice rules applying to those industries, different wage scales, and other factors directly affecting the successful operation of the forest practice rules as applied to the forest products industries under the Lumber and Timber Products Code. Accordingly, on March 12, 1934, at a Public Hearing called for that purpose, there was presented by the Authority the so-called "President's Amendment" to Article II, Section (a) of the Lumber and Timber Products Code, providing for the inclusion under the jurisdiction of that Code of the products of those industries which were not specifically covered by a Code of their own. Coincidentally, there was issued by the Administration, with the approval of the Authority, an "Office Order" which provided that all codes then under consideration or which might later be considered and which covered primary forest products not then clearly under the jurisdiction of the Lumber and Timber Products Code should include forestry provisions substantially equal to those in the Lumber and Timber Products Code. It was further provided that the Deputy Administrator in charge of the Lumber and Timber Products Code should be consulted as to the adequacy of such provisions. The purpose of this order was to guarantee that all timber lands, except those owned by farmers and which were specifically exempt by the NIRA, should be handled uniformly and in accordance with sound forestry practices. As a result, forestry provisions were included in a proposed Code for the Pulpwood Industry, and suitable amendments were prepared for an existing Hardwood Distillation Code.

At the date upon which all Codes were terminated, the so-called "President's Amendment" had not been approved.

Although accomplishments under the forest practice rules of the Code were substantial during the short time it was in effect, it was apparent that if those persons subject to them had been exclusively large timber owners and producers, those accomplishments might have been materially increased. Thus, from the public standpoint of getting the timber land under suitable forest management with the least possible delay, greater concentration of ownership might have been a decided advantage.

A second difficulty, and one which made almost impossible a proper administration of the forest practice rules in some regions, was the lack of jurisdiction over all forest products producers.

A third difficulty, the effect of which it is impossible to appraise, was the delay that occurred in getting the public portion of the forestry program under way. Article X of the Code provided that if the Conference

should determine that the measures initiated by the industry required the cooperation to some extent of Federal, State and other public agencies said measures might to that extent be made contingent upon such cooperation. Schedule C, the amendment to Article X, did not contain this language, but stated, "..... it being recognized that the extent to which these undertakings by the Lumber and Timber Products Industries are capable of successful accomplishment is dependent upon the extent and character of public cooperation in each state." The industry promptly put into effect the forest practice rules, and it is reasonable to suppose that the failure of public agencies to initiate and carry through the public measures approved by the Conference during the life of the Code may have seriously interferred with successful administration of the forestry provisions by the Code Authority.

Thus, at the end of the Code period the obstacles to continued progress in private forestry largely remained.

2. The Public Forestry Program

The Conservation Conference of October, 1934, and January, 1935, recommended to the Secretary of Agriculture a definite program of action which would form the contribution of the Federal and State governments to round out the private Code measures in a coordinated plan of American forestry. As provided by Article X of the Lumber and Timber Products Code, the Secretary of Agriculture made recommendations to the President for a Federal program. These recommendations followed those of the Conference and were presented in the form of a bill drafted by the Forest Service and designated as the "Omnibus Forestry Bill." The presentation to the President took place on May 9, 1934. Congress was anxious to adjourn and the President felt it inadvisable to request the proposed legislation at that Congressional session. It is probable that the large appropriation called for in the bill may have influenced his decision to some extent. Undoubtedly some of the provisions could have been omitted and the amounts called for reduced in some instances without materially affecting the public's immediate obligation toward the whole forestry program. Some of the proposals of the Omnibus Bill are, however, being met temporarily in other ways. For example, increased cooperation with the states is being carried on through increased appropriations under the existing Clark McNary Act (43 Stat. 683). The usual fire protection efforts have been supplemented by those of the Civilian Conservation Corps. Emergency funds have been made available to acquire large areas of land for national forest purposes and credit has been extended to several lumber companies by the Reconstruction Finance Corporation. The extension of long-term Government credits to forest owners through a forest credit bank, to enable them to handle their properties on a basis of sustained production of timber crops, as recommended by the conferences, was presented to the 74th Congress in Senate Bill 3417 on August 14, 1935. In addition, on January 2, 1935 the President wrote to the Governors of the several states urging them to call together representatives of the Federal and State Governments and of private industry to consider tax deliquency on timber lands and other forestry questions as set forth by the Conference. Some such meetings have been held.

The future of forest management necessarily rests upon continuity of forest ownership. Unstable ownership prevents long-time planning and discourages efforts to refine management methods. At present nearly 80 per cent of the best forest lands are privately owned. There is small likeli-

hood that public funds can be made available sufficient to recapture a large portion of these lands and the timber upon them within one or even two decades, even if the public should desire to do so. Ownership, then, must remain predominantly private, and the task is to secure continuity by removal of the recognized obstacles such as excessive carrying charges, uncertainty as to future markets, ineffectual protection assistance by the public and inability to secure low-cost financing.

At the close of the session on January 26, 1934 the Article X Forest Conservation Conference provided for a committee consisting of an equal number of public and industry representatives whose duty it should be to take promptly such action as might be appropriate to give effect to the recommendations of the Conference.

It was provided further that the Conference should not definitely disband, but should consider itself in recess, to be reconvened on recommendation of the Joint Committee upon the approval of the Secretary of Agriculture.

This committee met frequently during the period of the Lumber Code, and again on June 12, 1935, after the Code had been dissolved. After consultation with public and industry leaders it found:

"That the Joint Conservation Program, recommended by the Forest Conservation Conference and further developed and established by appropriate agencies and approved by this Committee is adequate, feasible, and should be carried forward without change, except as to method;

"That the Lumber and Timber Products Industry be urged voluntarily to continue to carry out the provisions of Schedule C and the Rules of Forest Practice through their trade associations and by their individual members;

"That all other forest-using industries and all owners of forest land, whether public or private, including farm woodlots, be urged to join voluntarily in this enterprise;

"That the U. S. Forest Service and other public agencies, federal and state, be urged to coninue and enlarge their cooperation in carrying out the work toward the objectives set up under Article X;

"That in the pursuit of the federal and state forest acquisition program, prompt steps be taken by the U. S. Forest Service to bring about cooperation of federal and state authorities and the forest industries in working out the place of each type of ownership in sustained yield units;

"That the legislatures of the several states containing forest lands be urged to meet the wishes of the President of the United States, as expressed in his letter of January 2, 1935, by early enactment of appropriate laws to aid in carrying forward this joint program;

"That the President of the United States be respectfully urged, as promptly as is compatible with the national interest, to submit to the present Congress the program of forestry legislation founded upon the recommendations of the Joint Committee of the National Article X Conference and approved by the Secretary of Agriculture;

"That public statements of intention to carry forward the forest conservation program be issued by authoritative spokesmen of both industry and the public."

The National Lumber Manufacturers Association, a federation of the principal regional lumber manufacturing associations which had functioned under the Lumber Code as Division and Subdivision Agencies administering Article X, as well as other provisions of that Code, has declared the intention of its member organizations to proceed voluntarily with the industry's part of the agreed program. This membership represents considerably more than half the lumber production of the country.

The personnel of the U. S. Forest Service, previously assigned to this work, has continued to cooperate in basic studies and in educational activities among private operators.

The Forest Service has also prepared a revision of the original "Omnibus Bill" for consideration of the present Congress, which is calculated to give effect to the recommendations of the Conservation Conference. The outstanding features of this bill are proposals to: (1) Increase the Clark-McNary cooperative fire money authorization from $2,500,000 to $5,000,000; (2) authorize an appropriation of $1,000,000 to carry on Forest Service and State and private forest cooperation; (3) authorize an appropriation of $6,000,000 for completing the Forest Survey plus authorization for an annual appropriation of $250,000 to keep the data current; (4) provide authorizations for forest research along several lines; (5) authorize the Secretary of Agriculture to enter into cooperative sustained yield management agreements with private operators, who should place their forests in units to be jointly managed with public forests; (6) provide by bond issue, or otherwise, for a large-scale Federal forest acquisition program to be carried on for ten years by the appropriation of $50,000,000 per year to permit acquisition by the Federal Government of 224,000,000 acres of forest land and 150 billion feet of privately owned timber.

As already stated, there is before the Congress a proposal (Fletcher-Caldwell Forest Credits Bill) to extend the facilities of the Farm Credit Administration to the field of forest management, in order that forest owners who desire to operate on a sustained yield basis may secure loans at low rates of interest commensurate with the risk and return.

It is apparent that this joint conservation program contains the beginnings of an effective national forestry enterprise. Three actions are necessary: First, the Legislatures of the forested states should overhaul their tax systems, should arrange for State management of tax reverted lands, and should assure the maintenance of adequate Forestry Departments; second, the Congress must enact legislation to carry out its recognized obligation to encourage continued forest ownership and thus make private forestry possible; third, private operators and timber owners must carry on that portion of the joint program assumed by the

Lumber Code Authority under Article X. It is also necessary to bring into the picture owners of farm woodlots and forest users not members of existing lumber manufacturers' associations.

Although the forestry provisions of the Lumber and Timber Products Code were in effect less than one year, that experience was sufficient to demonstrate that the system of control set up under the Code was sound and would adequately meet all the needs of the public interest in privately owned forests if it had continued to receive the wholehearted support of all those under its jurisdiction and public forestry agencies and if it had been legally enforceable.

CHAPTER III

THE PROBLEMS OF PRODUCTION

A. CAPACITY

Capacity, as related to sawmills, is a relative term, and the basis for the use of the word in this chapter is as follows: 54 hours per week, 50 weeks to the year (2,700 hours) multiplied by the rated hourly output of the sawmill equipment. Some such arbitrary basis must be determined for the reason that there are many sawmills that are equipped to operate only during the hours of daylight, while other and larger plants are so equipped as to permit operation during all hours of the twenty-four.

On the basis of the formula outlined above, the annual capacity of 17,467 sawmills to which a rated hourly capacity was allocated under the NRA Code, amounted to more than 69,000,000 M b.m. (Thousand Feet Board Measure.) (*) The largest production within the last ten years was 39,000,000 M b.m. (**) And it is a matter of record that many of the very largest mills in the country operated regularly on a two-shift day during the year 1929 when this peak of production was reached.

In discussing the capacity problem the standing timber will be referred to as being in areas or in regions, but when reference is made to sawmills and production the reference will be to divisions as comprehended in and established by the Code of Fair Competition for the Lumber and Timber Products Industries. The divisions and subdivisions under the Code generally follow the geographical boundaries of the regions, but for specific delineation of any division, reference should be made to the Code in Appendix I.

Areas of merchantable standing timber have been or are now in existance in practically every state in the Union except Kansas, Nebraska and North Dakota, and as the settlement of land progressed from New England and the Eastern seaboard, small sawmills were established to supply local needs. These mills were followed by larger units for the commercial production of lumber, and then as the supply of merchantable timber was exhausted, or as centers of demand developed closer to other areas of merchantable standing timber, commercial sawmills were established in these new areas. Thus many small neighborhood and some commercial sawmills have been left behind in areas practically or completely denuded of commercial saw timber and in areas where saw timber is available but is so far away from the centers of demand that it is not possible for the finished product to compete with lumber from other areas more advantageously situated.

(*) Unpublished compilation by Research & Planning Division, NRA, Mill Capacity Statistics, June 1, 1935 - and Table XIX.

(**) Table V.

With the change of production centers for lumber influencing the establishment of new mills, it can readily be seen that a very considerable portion of the rated capacity of the sawmills is not much more than a figure of speech. It is known that many hundreds of mills still carried on the records as being able to produce have not actually produced, and that many thousands of other mills have been in operation for but a very small fraction of the basic hours per year, in any year of the past ten. This is true particularly of several thousand small mills located in the Northeastern Softwood and Hardwood Divisions and in the North Central Division where the supply of virgin stands of saw timber was virtually eliminated several years ago and only second growth timber is now available or is becoming available. Many of these small sawmills have reverted to original type and are operated only to supply an immedaite neighborhood lumber requirement.

Many of the small sawmills do not have the type of equipment that would permit them to produce a grade of lumber that would compete with the output of the larger mills in the principal consuming markets. Coupled with the fact, as previously discussed, that so many of these mills are located away from the present centers of production where distributors tend to congregate, the lower grade of output and the difficulty of placing the product in the market would normally tend to reduce the effective capacity of this very considerable group of mills.

There must also be taken into consideration the fact that as a result of the movement of centers of production and the consequent change from large mill to small mill operation within producing centers, there are known to exist many large mills with rated hourly capacities ranging upward into the thousands of feet that can not produce more than a fraction of this rated capacity for the reason that the timber supply either has been completely exhausted or is so far removed from the mill site that it is practically impossible to deliver logs to the mill in quantity sufficient to keep the machinery operating even the theoretical number of specified hours.

These sawmills, under handicap of location, are always potential producers of lumber but seldom actually produce except when the price of lumber reaches a level that will permit recovery of high costs from the sale of this marginal production.

The West Coast Region is an exception to the general statements above. In this region the standing timber areas had been the object of speculative purchase since the period of the land grants to railroads, and particularly after many in the Lumber Industry became convinced that when the supply of virgin pine of the Southern states was exhausted there would be no further production from that region and the only available softwoods would be those of the West Coast Region. Many large and costly mills were erected in the West Coast Region to meet this expected demand, but the South continued to produce softwood lumber when much second growth timber began to reach maturity or merchantable size, and that region has not yet failed to offer competition for its share of the consumer demand for softwoods.

With Southern pine competition continuing, the West Coast mills could not find a profitable market for lumber from all of their installed capacity, and many have never manufactured even to 50 per cent of the rated capacity. In fact, some of the finest sawmill machinery procurable has never operated in actual production although installed in West Coast Region sawmills backed by ownership of standing timber sufficient to sustain capacity operation for fifty years.

Carrying charges of interest and taxes ultimately became too great a burden and in many cases it was necessary to liquidate the investment. Under this economic pressure large areas of standing timber was converted into sawmill products even though it was recognized that this center of production was handicapped by a location distant from the then existing centers of demand and that difficulty would be encountered in marketing such products in competition with those originating in areas much more advantageously located. Data (*) indicates that rated mill capacity in the West Coast Division is equal to several times the annual effective demand for its products. This excess capacity and the economic demand for liquidation of the investments in standing timber have forced sawmills to produce when there was no effective demand for the lumber and when the market was created largely through reduced prices and without regard to return of total cost of production.

Seasonal weather conditions and the terrain upon which the merchantable stands of timber are located also have a decided effect upon the actual as compared to the theoretical or rated capacity to produce. In the Southern Pine Region the land is fairely level and the weather conditions will permit woods operation and consequent sawing of lumber practically throughout the year. In the West Coast Region generally favorable weather conditions are also encountered but there is a more difficult terrain and logging operations can not always be carried on. Moving inland to the Western Pine Region, generall comprising the mountain range country, severe seasonal dislocations and unusually rough terrain are encountered, adding to the difficulty of producing logs. Rated capacity of the sawmills in these latter two regions is undoubtedly a very different quantity from effective capacity to produce lumber.

Other factors governing capacity of sawmills are size of trees, compactness of timber stand and character of logs. It has been pointed out that production in the Southern Pine Division is now largely reduced to utilization of second growth, and consequently smaller trees are being logged and worked into lumber with greater ease of operation than would be the case if a virgin stand of large trees was being utilized. The stand of trees is not heavy but the logs are sound and clean. It is true that the small trees will not produce lumber in similar quantities and grades as will the large virgin stock, but the ease of operation permits large use of manual labor and does not require expensive mechanical equipment for logging and handling to the saws.

(*) Unpublished compilation by Research & Planning Division, NRA. Mill Capacity Statistics, June 1, 1935.

The production in the West Coast Region is practically all from virgin timber. The trees are large, the stand is very dense, and most of the operations are "clear cutting" (taking all merchantable trees and disregarding condition of remaining young growth) so that logs of all sizes and conditions reach the saws. (*) Being required to handle a preponderance of large logs over difficult terrain, these logging camps and large sawmills are highly mechanized units requiring that the majority of the employees shall have some degree of technical training.

The production in the Western Pine Region is largely from virgin timber and over very rough terrain. Here again clear cutting until recently has been the rule but the timber stands range from sparse to very dense, and the trees from small to very large. To fit these widely differing conditions the sawmill capacity is made up of many small mills and some few large mills. All mills are required to handle the miscellaneous types of logs resulting from clear cutting.

Hardwood is produced in every state in the Union except Arizona, New Mexico, North Dakota, South Dakota and Wyoming, the production in the states of California, Nevada, Colorado, Idaho, Montana and Utah being very slight. (**) Small mills predominate but there are a few large mills. The capacity of these large mills is largely taken up with production for special orders and for use by integrated processing plants. Selective logging (cutting trees selected as best suited to produce the type of lumber desired) is largely practiced in the hardwood divisions and usually the mills have only first class logs to handle through the saws.

The over-extended capacity to produce lumber has tended to the establishment of excessive inventories, for in many instances the shadow of this unused capacity has forced other operating units into production schedules which they knew to be in excess of the effective demand for their product. With the unused production capacity in existence it has always been necessary for those sawmills producing lumber to avoid any semblance of under-production that would tend to a real or an imagined shortage of lumber. This was demonstrated about the time the Lumber Code was being discussed, and when it was expected that there would be a very considerable demand for lumber in the carrying out of the then proposed Government building program. It has been reported that many thousands of small mills in the Southern Pine Division were then encouraged to, and actually did start operating under the reported prospective shortage of lumber as a result of that proposed building program. Not only did the small mills go into production but many of the large mills stepped up production, not only in the Southern Pine Division but in the West Coast Division and in the Western Pine Division; and this hopeful production was indulged in despite the fact that the industry then had on hand a heavy inventory of wholly or partially manufactured stock and the effective demand for the prior year had been at the low for more than fifty years.

(*) Oregon and Washington have slash disposal laws which do not allow consideration of young growth.

(**) Table XVII B

References have been made to the three major softwood divisions only, as these three divisions have produced from 81 to 84 per cent of all lumber consumed over a period of years. Reference also has been made to the Southern and Appalachian Hardwood Divisions, which two divisions have produced approximately 70 per cent of the total hardwood consumption. The above quoted figures are particularly applicable to the period from 1929 to 1934, inclusive.

Commenting briefly on the above displayed data, and bearing in mind that production in the year 1929 was the largest in any of the past ten years, it will be noted that the peak production of 1929 utilized less than 50 per cent of the Southern pine rated capacity and slightly more for Western pine, while West Coast utilized about 70 per cent of its rated capacity, with the Appalachian and Southern Hardwood Divisions utilizing less than 25 per cent of their rated capacity.

When the results of the depression began to be definitely felt in 1931 and 1932 the position of these four principal lumber producing divisions was particularly acute, and the actual utilization of the rated capacity of the sawmills in those divisions, as indicated by the data, was almost negligible.

In viewing these data it should also be borne in mind that the rated capacity of the sawmills in the Southern Pine Division is about equally divided between small mills and large mills, and that this condition also largely prevails in the Western Pine and the Appalachian and Southern Hardwood Divisions. The rated capacity of the mills in the West Coast Division is largely that of the big mills.

Remembering that large mills generally are expensive installations almost universally backed by extensive timber holdings all requiring considerable investment, and that the small mills are almost universally without extensive timber backing and usually represent but small investment in equipment, it can be seen that the economic pressure of taxes and of interest would be less severe on the small mill capacity than on those divisions in which the large mills predominate. These economic considerations would largely dictate whether mills actually continued operation in the face of declining prices and over-extension of stock or whether production would stop and the rated capacity be not utilized.

The excess capacity of the sawmills may best be illustrated by the two following very brief tabulations:

Sawmills: Ratio of Rated Capacity for 1934 to reported Production in the Principal Lumber Producing Divisions

	Southern Pine a/	West Coast Fir, etc. a/	Western Pine a/	Appalachian & Southern Hardwoods b/
1929 Production (million feet)	11,630	10,147	5,217	5,315
Year				
1929	2.3	1.4	2.1	4.2
1930	3.6	1.8	2.7	3.8
1931	6.1	2.6	4.0	4.4
1932	8.8	4.4	6.0	5.7
1933	6.4	2.9	4.7	6.8
1934	5.8	3.2	4.1	6.6
1934 Production (million feet)	4,680	4,275	2,649	1,950

a/ These softwood producing Divisions reported 81 to 84 per cent of all lumber shipments originated therein.

b/ This hardwood producing group shipped approximately 70 per cent of all hardwoods.

Sawmills: Ratio of Rated Capacity for 1934 to reported Production in the minor Lumber Producing Divisions

	Northeastern Softwoods	Northern Hemlock	Northern Pine	Redwood	Cypress
1929 Production (million feet)	646	486	357	590	381
1929	2.4	1.4	1.3	1.3	1.6
1930	2.8	1.8	2.2	1.6	1.6
1931	4.7	2.7	5.0	2.7	2.4
1932	6.6	6.2	8.2	4.4	5.2
1933	6.0	6.0	9.8	3.7	5.4
1934	5.4	3.9	5.7	2.2	5.6
1934 Production (million feet)	290.9	110.3	84.4	350.5	110.3

In connection with this group of data relating to minor lumber producing divisions, it should be considered that these various divisions and the capacity and the production listed represent, for the entire group, only from 10 to 15 per cent of all lumber used; so while the figures are informative and are presented for comparison with similar data for the principal lumber producing divisions, this indicated excess of capacity would have no serious effect upon production in general. The above comments do not apply exactly to the Redwood Division, for in this particular type of operation the large mills and highly mechanized operations are again found, but the number of operators is very limited. It will be noted that the data disclose the Redwood Division operated at nearly 80 per cent of its capacity in the peak year of 1929; that in the low year of 1932 it was operating at less than 25 per cent of its rated capacity; and that in 1934 the mills were operating at nearly 50 per cent of their rated capacity.

As would naturally be supposed, with more than 17,000 sawmills located in practically every state in the Union, many different manufacturing methods are involved. These methods can be roughly classified into the methods and practices followed by the small sawmills, the methods and practices followed by the intermediate size sawmills, and the methods and practices that are a necessary part of the operations of the large sawmill units.

Aside from the size of these operating units there must also be considered the methods of manufacturing used by the different types of sawmills. Generally speaking, a considerable part of the production of the small hardwood mills is custom sawing. This is simply the bringing in of logs by their owners who desire them to be sawed up into certain specified articles of lumber generally for their own consumption. Another type of small sawmill is more prevalent in the Southern Pine Division. Here are several thousand mills that are engaged in the manufacture of some lumber products from the available standing timber in their particular neighborhood. The production by this group of mills is a more direct and less purposeful utilization of the standing timber. It is in fact a type

of operation that may best be described as mopping up an area. In other words, these sawmills are engaged in the sawing of logs from trees that are too small in size or too far removed to make their utilization profitable in regularly established sawmill operations. The purpose is simply to get the most possible out of the logs and to get that product, all too often of a low grade, into the market and sold for anything that it might bring. Most of the equipment is of low efficiency and produces lumber of distinctly substandard quality. Among mills of this classification is the group known as "roofer" mills of the State of Georgia. These mills produce lumber from small and immature trees and the product is usually the roughest, the poorest and the most irregular of any lumber production worthy of that name. The products of these mills are, as the term would indicate, simply rough boards of varying widths and lengths that are used as a foundation for other lumber or substitutes for lumber. These boards do not have to be of any particular width or length and they simply replace better manufacturing material in any type of construction to which they are adapted.

Manufacturing of lumber products of standard grades, sizes and representative qualities cannot vary considerably between mills in the same species area or between mills in areas producing competitive species. The lumber must be produced and sold in competition with the products of all other mills of similar character. Hence the manufacturing processes and procedures must be such as to produce lumber comparable in grade and sizes with other mills producing the same or competitive species.

There is another type of mill and one which added a distinct factor to the general problem of production -- those mills which are producing lumber from their own trees, in their own mills, which is not expected to and generally does not ever reach the channels of distribution for the reason that these products are put into other processes for finishing special items for their own use. These sawmills with integrated operations created a distinct problem under the Code administration and a problem which apparently had not been given adequate consideration and had not been solved in the drafting of the Code. It is plain to be seen that if one of those integrated operations -- the making of sawed wooden boxes -- was carried on by a sawmill manufacturing its own material for the box making operations, it would have a distinct competitive advantage over other box plants. Not only would such an integrated mill have the advantage of being able to use short length and low grade lumber from its actual lumber producing operations, but it also would be possible for it to transfer all of its products over to the box making factory at a price which might result in a loss for the sawmill but in an exorbitant or unreasonably large profit for its box making activities. This is just a sample of several of the perplexing conditions which arose through failure to properly comprehend and provide for the effect of integrated manufacturing operations within the sawmill industry.

The method of manufacturing by the various types of mills as discussed above added one other phase to the general production problem. It can be readily seen that the small mills operating sporadically would secure their labor only from people in the immediate neighborhood who would necessarily provide themselves with other means of livelihood than working in the sawmills. In fact, practically all of the labor in such type of mill was purely the type that used the sawmill wages as a supplement to other earnings. This type of mill could suspend production at any time or fail to resume production at any time and it would still not seriously affect any considerable number of wage earners. This same condition prevailed also in connection with other small sawmill operations whether those sawmills were of the movable type or whether they were of reasonably permanent installation. In either event, with production not being forced upon the mills, the labor that would be employed in those mills would ordinarily be supplementing other earnings with their sawmill wages. Also, as a general rule, these small mills were not burdened with any investment in standing timber and consequently added no burden of interest and taxes to be met regularly.

But the condition would be very different when the production of the larger sawmill units would be interrupted. These larger mills were accustomed to and were expected to operate about 60 or more hours per week. It was therefore necessary for them to build a reservoir of labor upon which they could depend for the sustained hours of operation. As a consequence of these conditions, labor migrated to the vicinity of the sawmills; in fact there had been many towns and small cities located or built up around sawmill activities. These mills were dependent upon this labor and this labor was dependent upon them. The mills also, because of their size, the amount of capital required for their building and the securing of the necessary timber to back them up, involved very considerable

investment and the properties were all subject to taxation. In connection with this groups of large mills, economic pressure for continued operations would, in many cases, force these sawmills into production even when there was no immediate demand for their products. With demand being reduced, prices would decrease under the pressure of the increasing supply and these sawmills found themselves compelled to operate at a direct loss. This necessarily caused the labor wage to be reduced. The wage of labor was the most important factor of the out-of-pocket or actual money cost of production; it was the one which would be subjected to the most pressure for reduction and in most instances was the least fixed item of cost of any that had to be met currently by the mills if they were to continue in existence.

After the adoption of the Code many hundreds of these small mills, faced with the necessity of paying a minimum wage and supplying information relative to their operations, did not again resume sawing. The larger mills, however, were not able to dispose of this problem so easily, but were actually faced with the necessity of continuing their manufacturing operations. They paid the minimum wage specified in the Code; they operated the maximum number of hours permitted; they produced their lumber and put it on the market expecting to find it moving in the usual channels of trade at the minimum prices set by the industry Code Authorities, only to be faced with a volume of production from other similarly located mills that, in the aggregate, was more than the market was demanding. These mills were virtually forced to continue production and their products had to be disposed of in some manner and at some price so that additional money could be secured for continuing operations.

B. PRODUCTION - VOLUME - USAGE

Lumber production is largely a forced and involuntary process. It is not similar to factory production where specified materials are processed to make particular products. Articles produced in the usual factory may be for orders already in hand, for replenishment of stocks, and in anticipation of results from a prearranged selling campaign. Usually these production processes may be brought to a stop at any time and not leave any large stock of raw materials on hand to burden the cash resources with recurring fixed charges of interest and taxes.

Merchantable standing timber is the raw material of the saw mills. It must be either owned or controlled in such quantities as to furnish saw logs at the mill for such a period as will be economic justification for the establishment of the converting units and at such a cost as will permit the sale of the resulting lumber products at a price, under reasonable competitive conditions, that will return a profit. Standing timber must be converted into logs and other forest products under pressure of nature, for trees reach maturity as do other crops and then deteriorate, and slowly but certainly lose value. Logs usually must be so sawed as to produce the best possible assortment of sizes and grades of lumber, whether those sizes and grades are wanted or needed.

Thus it will be seen that in the production of sawmill products, as a usual thing, there cannot be a particular choice of the raw material, and that the product will, to a very large extent, depend upon the size and quality of saw logs, the efficiency and ability of the men, and on the type of mill equipment operated by them. This is particularly true where lumbering operations are carried on purely as a salvaging operation. In later years, salvaging of values from standing timber has been the predominant factor in the production of lumber, as the mills were established and equipped and the standing timber had been acquired, all of which necessitated payment of the carrying charges for the investment which in turn forced the sawmills to operate without regard for the immediate value of the products.

Other economic pressures required that quantities of standing timber be converted into sawmill products. Land under lease must be cleared before the lease period expired. Standing timber purchased to be paid for out of progressive utilization demanded liquidation. Vast holdings of standing timber (*) acquired possibly as a speculation and covered largely by mortgages and bond issues, demanded sufficient operation to realize cash to pay carrying charges of interest and taxes.(**)

(*) Table III - Stand of Saw Timber in the United States by Regions, States and Classes of Ownership.

(**) Tables XII, XIII, XIII (a), XIII (b)

These conditions were particularly true of the larger virgin timber lands in the West Coast region, and competing woods, while not possibly under the same economic pressure for liquidation saw their market disappearing unless they in turn stepped up production even though the products were in excess of demand and had to be sold only on a glutted and falling market. From the earliest days lumber has been produced to meet a natural and not a created demand. It is true the industry has made many refinements in its products, largely to meet the competition of its own members, but except for these, the products of most mills today are little different from those of the earlier mills. The principal products are not readily susceptible to any uses other than those of long-established custom.

The capacity to produce lumber has been shown to have been always in excess of the demand for the product. (*) Changing centers of demand and changing centers of production have worked one with the other to build up a capacity to produce that has always been a weight upon the industry.(**)

Ascending volume of lumber production marked the westward movement of population with the settling of new farms, and the opening up of towns to supply the new farming communities. This impetus to production was followed by a long maintained demand resulting from city improvements, better buildings on the farm, and finally by the turn of population to the city requiring other and further duplication of habitation. (***)

(*) Table XX-Comparison of Equipment Utilization.
(**) See Table IV - Percentage of Distribution of Lumber Production, by Regions - 1849-1934; the Evidence Study Series No. 22, "The Lumber and Timber Products Industry", W. E. Yost, Division of Review, NRA
(***) The Department of Commerce, Bureau of Foreign and Domestic Commerce, Forest Products Division, published in January 1935, data indicating that the peak consumption of lumber was from 1904 to 1913. During this period the consumption of lumber did not fall below 40 billion feet, and in the year 1906 reached almost 45 billion feet. From 1914 on to 1928 consumption fluctuated from a low of 28 billion feet in 1921 to a high of 39 billion, 700 million feet in 1923.

This high consumption of lumber in the period from 1904 to 1913, and which was partially maintained up through 1917, very closely follows, and it is fair to assume is linked with the movement of population that is very definitely shown in a publication by the U.S. Department of Commerce, Bureau of the Census, entitled "State of Birth of the Native Population" (1932.) This publication is based upon the Census of 1930, and on page 11, Table VII, the migration of population is very clearly depicted covering the period from 1870 to 1930. Data therein presented shows that New England constantly lost population and that the Middle Atlantic States also showed a continual loss, gradually, however, decreasing to 1930. The West North Central States gained population constantly from 1870 to 1910; then this section began to lose its native-

The downward trend of the volume of lumber production has been marked by the well-recognized turn or trend of population from the rural to the urban centers. (*) Then the density of city population required more and larger buildings, bringing about fire hazards and resulting in the adoption of stringent fire regulations restricting the use of wood for construction purposes in many of the larger cities. Coupled with this downward trend of lumber use and as one of its contributing causes was probably the development of the use of brick and the development of the use of concrete and construction materials which had come onto the market with the development of science and the arts. This influx of materials, new in fact or new in use, was of prime importance to the Lumber Industry as it coincided with a period of rising costs which had made necessary rising prices for a great many of the products of this industry. With these increasing prices diminishing the price differential between lumber products and these new building materials, there

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(Footnote continued)
born population. The South Atlantic and the East South Central States all lost population throughout this 60-year period.

There was a gain in population in the West South Central States and in the Mountain and Pacific Region.

The movement of population into the West North Central States reached its peak in the period 1890 through 1900. The movement of population into the West South Central States, while continuous from 1870 to 1930, reached its peak from 1900 to 1920. Beginning in 1910 and continuing through 1930 the Pacific States absorbed population apparently from every other group of states, as those sections which were losing population registered heavier losses in the years from 1910 to 1930, and usually those sections gaining population gained at a lesser rate in this period than in the prior period.

(*) In 1933 the U. S. Department of Commerce, Bureau of the Census, reprinted a part of Chapter I, Volume 2, 15th Census, Reports on Population. In this reprint, on page 9, are displayed data concerning urban and rural population. In Table III are published data from 1790 to 1930, and it is therein clearly shown that population in places of 8,000 or more has increased from 3.3 per cent of the entire population in 1790 to 49.1 per cent in 1930. It is further shown that one very definite movement took place between 1880 and 1890, and that from 1900 to 1930, the movement to urban centers of 8,000 or more increased more than 17 per cent.

It is also shown in Table IV that the population concentrated in places from 2,500 upward increased from 35.4 per cent of the population in 1890 to 56.2 per cent of the population in 1930. It is also interesting to note that this same table shows that the greatest concentration increase has been in places of one million or more, although all size groups increased in population except that group of cities between 500,000 and 1,000,000 except for a slight decrease in the population centers of 100,000 to 250,000.

was a constantly increasing trend away from the use of lumber. (*)

During this time when this latter movement was in progres and was contributing to the decrease in the effective demand for lumber products, the capacities of the mills had been increasing largely through the establishment of new production centers in the Lake States, then in the Southern pine section of the country and then in the West Coast region.(**)

Apparently it was thought that with the increase in population of the United States there would never cease to be a progressively increasing demand for lumber products which would drive to their approximate capacity the vast number of sawmills which had been put into operation in the United States. During the last 50 years there has been an enormous increase in the number of uses to which lumber has been put, but in spite of this wider use the actual volume per capita has declined and the total volume of consumption and of effective demand has been constantly on the decrease for a number of years except for the peak period of production in 1928 and 1929.

Up to the beginning of the depression there had been a constant increase in the capacity of the sawmills in the United States and this increase was installed in the face of the constant decline in the use of lumber both in total volume and in consumption per capita.

After the adoption of the Code and even under the maximum hours limitation and in spite of other specific methods adopted to control production, it was practically impossible to appreciably reduce the total stock of lumber products on hand awaiting demand. (***)

It is fair to state that this condition did not arise as a result of increased production but largely did result from the unforseen and unpredictable constant decrease in demand for lumber products. Lumber simply did not move. There was practically no demand for it as its best customer - the Construction Industry - was virtually out of the market in 1932 and in 1933. So in spite of all the actions that were taken to place the Lumber Industry in a better economic position, it is found that as a result of the overcapacity of the mills and the economic necessity

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(*) Table XXXIII, comparison between total construction and units shipped per $1,000 of construction for selected products during the years 1920-1934.

(**) See Table IV - Percentage of Distribution of Lumber Production, by Regions -1849-1934; the Evidence Study Series No. 22, "The Lumber and Timber Products Industry," W. E. Yost, Division of Review, NRA.

(***) Table LIII - Stocks, shipments and production of Softwood Lumber 1923-1935.

for most of them to operate at least some of the time, and with the decrease in shipment of lumber to the consuming market, the stocks on hand continued to be unwieldly and an actual threat to the ultimate soundness of the industry. After the adoption of the Code and with the promulgation of minimum prices and more stable conditions in the industry in general through the elimination of many unethical trade practices there was a general settling down and the reduced production was more nearly balanced by effective demand for lumber and timber products. There was later a very noticeable drop in the demand, and with production remaining at the established minimum under production control there was another short period when stocks of lumber on hand again increased.

However, until a very considerable quantity of the over capacity of the sawmills in the industry have been eliminated by the passage of time, which will make many of these mills ineffective, and until a condition of more stability in the industry has released many of the units from the economic necessity of producing lumber to raise money for carrying charges, there will still hand over the industry the constant threat of unrestrained production which can again over balance stocks and bring a chaos of price cutting and the consequent wrecking of industry units whenever prices rise to such a point as will make it at least seemingly possible for this vast overload of marginal capacity to gain some advantage, however slight, from again operating this class of mill.

C. FINANCIAL STRUCTURE

The capital or financial structure and the changes therein over a period of time naturally constitute a very important part of the problems of the industry. To properly study this phase of the industry there should be available quite detailed data concerning the assets, the liabilities and the capital structure in addition to profit and loss data of the organizations or firms in the industry. There are not available any authoritative and reasonably complete data on these phases of this industry. There are a number of firms and organizations purporting to supply certain of these data, but each covers only a limited sector of the whole industry.

The Bureau of the Census conducts a census of manufactures in the odd-numbered years. The classifications adopted by them are not exactly comparable with classifications of the industry used by other reporting services and especially by the Bureau of Internal Revenue. The census of manufactures also includes data from individuals and partnerships, but excludes all below $5,000 annual volume. It does not report any balance sheet or profit and loss data for these business units so reported otherwise. The Bureau of Internal Revenue, in its annual volume "Statistics of Income," is the only dependable source giving the related balance sheet and the profit and loss data. Their figures are presented only for corporations classified as forest product corporations which include, in addition to sawmills and planing mills, manufacturers of furniture and vehicles. The number of corporations so reporting to the Bureau of Internal Revenue ranged between 5,500 and 7,200 for the years from 1920 to 1933. The Bureau of the Census reports many additional organizations of comparable classification but, as noted above, this group of figures includes all types of financial organizations. The Lumber and Timber Products Code Authority under the NRA variously reported that manufacturers of lumber and timber products, exclusive of manufacturers of furniture and vehicle products, numbered anywhere from 17,000 to 24,000. The largest number of cost reports secured by them under Code administration was about 5,000, and there was no information from any of these reporting members of the industry as to assets, liabilities and type of financial structure.

As the data published by the Bureau of Internal Revenue are the most reliable data that can be secured and cover not only the financial factors but also the profit and loss results, these are the data which have been classified and analyzed, although it is recognized that such data also represent only a cross-section of the industry as they do not include reports from many of the larger corporations in the United States which, while not principally engaged in sawmill and lumbering activities, do control a very considerable area of standing timber and produce a large volume of sawmill products; nor do the figures include any of the business results of a not inconsiderable group of the partnership or sole-trader type of financial organizations.

Remembering that stands of merchantable timber exist in nearly every state in the Union and that conversion of this standing timber into sawmill products is being carried on by practically every type and size of sawmill equipment under conditions of weather and terrain

differing just as widely, it was only to be expected that there would be a wide range of financial results secured by the differing types of mill operations. These were affected also by the varying methods of conversion made necessary by the changes within the industry that largely resulted in the establishment of mills with rated hourly capacity of production largely in excess of any effective demand within the later years.

While this industry is mostly one of manufacturing and the actual usable products are the result of one or more manufacturing processes, the industry itself is based upon a natural resource. It must provide a dependable source of the raw material for its manufacturing plants, and by the very nature of this raw material the industry, as it has been constituted up to this time, has been compelled to carry very heavy investments in standing timber. Owing to the shifting bases of production made necessary by actual or effective elimination of first one area of standing timber and then another, and to a certain extent by the shifting centers of demand, the industry has built up a duplication of manufacturing equipment and has acquired an excessive supply of the raw material or standing timber.

While it is true that a considerable portion of this duplication of manufacturing equipment and of the ownership of excessive quantities of standing timber may be charged to faulty judgment on the part of the industry, such a condition actually does exist and must be considered in the broad view of the industry necessary for a study of its economic problems.

Viewing the industry only from the standpoint of the actual available figures covering not all but most of the corporations engaged in the industry, the following analyses are submitted. All figures quoted herein are from Statistics of Income, Bureau of Internal Revenue, or are developed from those statistical data.

While the presentation of data by the Bureau of Internal Revenue is quite complete for the industry as a whole, the classification of data is not as detailed as might be desired for the forest products industry. The deficiencies principally to be noted are that there are no separations of capital assets into:

(a) Standing timber.

(b) Plants and plant facilities.

(c) The related depreciation and depletion are not separately disclosed.

There is no segregation of the source of borrowed capital employed in the industry. It would be particularly desirable if information were available as to the current loans from banks and from individuals and parent or subsidiary corporations.

The published data of the Bureau of Internal Revenue do not permit a classification of the invested capital of this industry but it is

believed that a very considerable portion is and must be in standing timber, and without definite data as to the extent of this particular investment one especially interesting view of the industry is either completely obscured or very materially foreshortened.

Over the period of years represented by the statistics, the corporations whose reports are tabulated in the yearly Statistics of Income, Bureau of Internal Revenue, from 1926 to 1933, inclusive, are classified by the Bureau as corporations reporting:

1. Net income
2. No net income.
3. Inactive

These classifications and data cover a period from the year 1926, most commonly referred to as the major or standard year, up through the year 1929 and the following years of the depression, which reached its depth insofar as this industry is concerned in the year 1932.

The Bureau of Internal Revenue does not require all corporations to accompany their income data with balance sheet information, so that while the corporations actually reporting to the Bureau have ranged in number from 7,862 in 1926 up to 7,947 in 1928, and since that date continuously declined to 6,707 in 1932, with a slight increase to 6,879 in 1933, those corporations which have submitted balance sheets have been smaller in number and have decreased from 7,244 in 1926 to 6,137 in 1931, with a slight increase to 6,147 in 1932 and to 6,161 in 1933. Therefore, data concerning assets, liabilities and capital structure are from a group of corporations about five per cent fewer in number than the groups submitting data as to income.

The division of these corporations into classes of those reporting a net income and those having no net income will probably offer as complete a gauge of the actual trend in this industry as any other possible factor. (*)

The corporations reporting a net income numbered 4,591 in the year 1926 and 4,195 in the year 1929, decreasing to 2,340 in 1930, to 1,525 in 1931, and to 541 or just about nine per cent of the total number reporting in the year 1932. In 1933 profitable operations was reported by 1,638 out of 6,879 corporations. Except for the elimination of some 1,100 corporations between 1926 and 1932 this difference was naturally taken up by that class of corporation which reported no net income. This group numbered 3,271 in 1926, increasing slightly each of the years 1927 and 1928 and being practically the same in 1929 as in 1926. Beginning with 1930, however, the number of corporations reporting no net income in the forest products group numbered 4,868, a 50 per cent increase over the previous year, and this group had increased to 5,929 in the year 1932 and decreased to 4,882 in 1933.

(*) See Table XXIV

This review of the results of business operations of the corporations is given as one of the details concerned with the very definite and marked changes in the capital structure of the industry as reflected by this group of corporations. While the very marked decrease in corporations reporting incomes and increase in number of corporations reporting no net income has been one of the important reasons for the change in capital structure, one other factor should be considered, which is that the corporations as a class, irrespective of the yearly profit or loss results, continued to disburse cash dividends. (*)

These dividends and income tax payments to the Government were in excess of earnings in each of the years from 1926 to 1929, inclusive, and dividends were paid in the years 1930, 1931 and 1932 although the industry as a whole had lost nearly $110,000,000 in 1930, more than $177,000,000 in 1931, more than $202,000,000 in 1932, and $66,000,000 in 1933. Some corporations reported a net profit each year, but in no year were the reported earnings of the industry as a whole equal to the cash dividends paid out by all of the corporations reporting the payments.

While the year 1929 was generally represented to be and is shown by the statistics of most industries to have been the peak business year, this condition was not true in this industry. The dollar value of gross sales of the industry was the highest in 1926, being slightly more than $2,900,000,000. Gross sales decreased to $1,910,000,000 in 1930, to $794,000,000 in 1932, with a slight upturn to $923,000,000 in 1933. (**)

Analyzing the balance sheet figures of the industry as a whole from the close of 1926 to the close of 1933 (***) it will be noted that the assets decreased from more than $4,023,000,000 to less than $2,549,000,000 or 36.6 per cent. In this very material shrinkage of assets over this period of eight years the following items are of interest and should, in themselves, reflect information important to those interested in the industry.

Cash and receivables, the principal elements of the current assets of this industry, reached their peak of about $751,000,000 in each of the years 1926 and 1928, and beginning with 1929 decreased sharply to about $360,000,000 at the close of the year 1933. The other very important factor in the current assets position, that of inventories, also registered a very material and a much greater loss shrinkage from a high point of $770,000,000 in 1926 to a low of $338,000,000 in 1932, with a slight upturn to $367,000,000 in 1933.

A reference has previously been made to the fact that in these statistics the capital assets of this industry were not segregated as to standing timber and plant facilities, so the shift in this class

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(*) See Table XXXVIII

(**) See Table XXXIV

(***) See Table XXXIV

of assets cannot be as accurately and as completely analyzed as it should be to bring out the true conditions. The group of capital assets, less depreciation and depletion, shrank about $400,000,000 over the period of seveb years from the high mark of $1,854,000,000 in 1926 to the low of $1,448,000,000 in 1932. If it were possible to segregate the capital asset group into its principal factors of standing timber and of plant and mill site and manufacturing facilities, it would doubtless be shown that many of these larger corporations have divested themselves of considerable values previously invested in standing timber. While there are no definite figures available, it is safe to say that during the period from 1926 to 1929 there was a very heavy investment in sawmill machinery and in plants. Necessarily during those years when production was quite high there was also a correspondingly high decrease through depletion of the dollar value of the standing timber assets and depreciation of the plant facilities. It is also believed that the forest products industry has made but very little addition to its capital assets of mill sites and equipment since the close of 1929. As a consequence of these factors and because of the fact that most depreciation in mill site and equipment is on a basis of amortization with the natural resource and not on a straight line basis, much of the equipment and many of the plants have suffered actual deterioration considerably larger than that measured by the write-down of the values reflected in the composite item of capital assets, which, by reason of paucity of data, must include these two very differing types of assets.

As the total assets employed by this industry had decreased 36.6 per cent over the period of seven years and as the current assets decreased approximately 50 per cent in that period of time, the changes in the current liability and bonded indebtedness position of this industry also reflected a differing but understandable trend. The current liabilities did not pace downward with the current assets, the shrink here being 49.4 per cent instead of 52.5 per cent. The capital liabilities represented by bonded debts and mortgages were about $160,000,000 in 1926 when the capital assets were over $1,850,000,000. These capital liabilities had shown a constant yearly increase up to $265,000,000 in 1931, decreasing to $231,300,000 in 1933. But during this time the capital assets upon which these capital liabilities were based had decreased more than $400,000,000. The data compiled by the Bureau of Internal Revenue classified "other liabilities" under one general heading. Without the details and the information that would come therefrom the bare statement of the change in this particular liability is not as informative as it might be. Nevertheless it is very important to note that this group of liabilities decreased from nearly $462,000,000 in 1926 to about $168,000,000 in 1933.

With the very definite shrink in the assets employed in this industry it would be expected that the stockholders" participation or interest in the corporations would have changed materially. There has been a change in the actual capital structure as preferred stock has decreased from $285,000,000 in 1926 to $176,000,000 in 1933, and the common stock has decreased from $1,378,000,000 in 1926 to $1,159,000,000 in 1933.

Naturally the greatest measure of decrease in the stockholders' interest is represented in the decrease of the surplus accounts. This decrease was from $1,047,000,000 in 1926 to $463,000,000 in 1933. In this connection it should be noted, however, that all of this decrease in the stockholders' participation is not alone the result of losses, but can be largely attributed to the dividends, both cash and stock, that were disbursed to the stockholders as previously referred to. The cash dividends over this period of eight years amounted to $593,000,000, and stock dividends were declared amounting to $56,717,000.

In consideration of the broader problem of credit which is also connected with the financial problem, the analysis of the balance sheet data of the corporations classified by the Bureau of Internal Revenue as members of the Lumber and Forest Products Industry show the following: Current assets (consisting of cash, receivables and inventory) represented 37.8 per cent of the total assets in the year 1926, 27.4 per cent in the year 1932, and 28.3 per cent in the year 1933. The capital assets in 1926 represented 46 per cent of the total assets; in 1932, 53.5 per cent; and in 1933, 52.5 per cent. Miscellaneous assets and tax exempt securities together represented 14.2 per cent in 1926, 19.1 per cent in 1932, and 19.2 per cent in 1933. As has been noted previously, the total fund of assets of this group of corporations decreased more than 36.6 per cent from 1926 to the close of 1933.

In a similar analysis of the liabilities and the capital structure or proprietorship items other very startling changes are found. In the year 1926 all liabilities represented 32.7 per cent of the assets and the capital stock and surplus represented 67.3 per cent. In 1933 total liability had been reduced to 29.4 per cent of the total fund of assets, and the capital structure represented 70.6 per cent. Considering the separate classifications of liabilities and their percentage to the total of all liabilities, it is found that in 1926 the current liabilities represented 52.7 per cent of the total and that the capital liabilities represented 12.1 per cent. The classification of "other liabilities" is a very indefinite one, but as tabulated these liabilities represented 35.2 per cent of all liabilities in 1928 and 22.5 per cent in 1933. In 1933 the current liabilities represented 46.7 per cent of the total liabilities, this being a drop of six per cent as compared with 1926, and the capital liability represented 30.8 per cent of all liabilities in 1933 as compared with 12.1 per cent in 1926.

In the period under comparison the changes in the capital items have been quite sharp. In 1926 the stock, both common and preferred, was equal to 41.3 per cent of all assets, while in 1933 it was equal to 52.4 per cent. In 1926 the surplus of all of these corporations was equal to 26 per cent of all the assets, but in 1933 this item had decreased to 18.2 per cent of all assets. Again it must be remembered that during the period 1926 to 1933 the total fund of assets had shrunk more than 36.6 per cent.

In analyzing these data from the credit standpoint, consideration must be given to those factors which affect the credit of the industry and probably the best gauge is the simple but effective and long-used formula of the banking fraternity, namely: that current assets must be

at least two and one-half times the current liabilities before a business is considered to be in a current borrowing state. Depending upon this formula, the generally accepted element of current assets should be further analyzed. This comparison would not be a fair one if consideration was not also given to the particular character of this industry. And this is particularly so when the inventory factor of the current asset group is considered. While the available figures and data do not definitely disclose these facts, it is reasonably assumed that this industry must include as inventory in the usual cycle of manufacturing a very considerable quantity of so-called raw material, depending upon the practices of the individual manufacturer, ranging from logs in the woods, down through transportation from woods and up to the so-called saw-deck and then through to the drying and the planing processes.

In many instances and in several localities the cycle of production extends over a number of months in each production year. In some sections it is not possible to fell trees in the winter. In other sections it is not possible to transport logs from the woods to the saw-deck during all periods of the year. In other sections and with certain species of wood it is not conducive to good first quality products to cut logs in the woods if they can not be almost immediately sawn into rough lumber products. With these considerations in mind it is natural that this industry as a whole should carry an inventory which in other manufacturing industries would be considered excessive. The comparison to be now given should be read with the above facts in mind.

Based on the amount of inventory of the industry at the close of each year it is found that in 1926 the gross sales were slightly less than four times the inventory and this condition prevailed with gradually decreasing percentage through the year 1929. Beginning with 1930, however, with the inventory remaining high and the sales constantly decreasing, it is found that the sales for 1930 were just about three times the inventory; less than three times in 1931; about two and one-half times in 1932; and two and eight-tenths times in 1933. The cost of goods sold offers a more reliable indicator of merchandise turnover, and using this as the basic figure to be compared with the inventory on hand it is found that in no year between 1926 and 1933 did the goods or merchandise moving out into channels of trade amount to three times the inventory. In 1933 the cost of goods sold aggregated less than twice the value of the goods on hand to be sold.

In addition to this slow turnover of inventory, the analysis of the figures also indicate collections for billed merchandise to have been very slow. In 1926 on the basis of the usual method of computation (the percentage of outstanding accounts to total sales applied to the days in the year), the average sale was not collected until 75 days after invoice date. This condition had gradually grown worse even during the period up to 1929, at which time the average between invoice and collection was 84 days. Naturally during the depression period this condition was aggravated, and in 1932 there was an average of 150 days between the date of invoice and the date of payment, and this excessive number of days was almost a 50 per cent increase over the year 1931, when the average elapsed period between invoice and payment was 105 days. In 1933 this period between billing and collection had decreased to 117 days, but even this reduced period is very much in excess of the experience record of other industries not indulging in sales on the deferred or installment plan.

A compilation has been made presenting as to all major classifications of industry an analysis of the number of firms in each such industry that reported profits for the years from 1920 to 1930, inclusive (*)

While it has been usual to refer to the year 1926 as the basic or measuring year, an analysis of the data shows that actually 1920 was the best year for the greatest number of firms in all industries to report profits. In that year 73 percent of all reporting corporations in the forest products group earned a profit. This percentage was exceeded by only two other major groups - those of Paper pulp and Printing and Publishing, which had respectively 80 and 79 percent of their number reporting profits in that year.

Even during the so-called peak years of 1928 and 1929 the groups of corporations did not report such high percentage of the number of members of the industry making profits.

From this relatively high point of 73 percent in number reporting profits in 1920 (1926 to 1929 ranged between 58 and 53 percent), the data show that in 1932 only eight percent of all corporations in the forest products classification reported a profit. This is the poorest record of any class of corporation, as no other industry group shows less than 10 percent of its total number reporting profits.

Extending this comparison and using total capital employed as the basis (**), again it is found that the Forest Products Industry was among the highest in 1920 and the lowest in 1932. During the year 1920, 89 percent of all assets employed in the Forest Products Industry earned a profit, but during 1932 only 11 percent of all assets employed in the industry reported a profit. Again this 11 percent is the lowest of all classes of corporations, the nearest being the Metal Industry in which only 16 percent of total assets employed were able to report profitable operations in the year 1932.

The Bureau of Internal Revenue has furnished for the years 1931-1933, inclusive, certain data concerning corporations classified on the basis of the extent of the assets employed. This information is included herein as Table XXXV.

It will be noted that the corporations are grouped beginning with all of those having assets of under $50,000 each; the next grouping is from $50,000 to $100,000; and the final grouping is of corporations having assets of over $50,000,000 each. It will be noted from the table that a very considerable number of the corporations in this industry fall within the first two groups, namely, corporations having total assets of less than $100,000 each. In each of the years tabulated the corporations in the two groups of less than $100,000 totaled more than 50 percent of all corporations in the industry.

(*) See Table XXXVI

(**) See Table XXVII

It is shown that there had been a gradual downward shifting of the corporations from the larger-asset classifications. This is natural and normal in view of previously discussed shrinkage in all classes of assets employed in the industry over the period covered by the statistics furnished by the Bureau of Internal Revenue.

As the number of corporations in this industry reporting profits during 1933 was more than three times those reporting profits during 1932, it would be natural to expect that this change from a loss status to a profit status would be relatively normal in the various classifications and this is borne out by detailed figures with one or two notable exceptions. In the classification of $50,000 corporations the change over 1933 was less than two and one-half times, but in the next three higher groups the change was at a ratio of more than three to one. This classification was not prepared by the Bureau of Internal Revenue prior to the year 1931; consequently the comparison can go no further back than that year.

As has been mentioned before, the Bureau of Internal Revenue does not publish complete details in connection with the sub-classification of "capital assets". Neither do they publish any information upon which an accurate division could be made of notes and accounts bearing interest as distinguished from those accounts payable upon which no interest is to be computed; nor is there any information as to what constitutes "other liabilities".

In viewing all "capital assets" of the corporations reporting to the Bureau of Internal Revenue (*) it is found that from the close of the year 1926 through the close of the year 1933 the "capital assets" on December 31, 1926, in the amount of $1,853,888,000, had been subjected to a write-down of $708,453,000. This sum is made up of $454,061,000 of depreciation and $254,392,000 of depletion. Considering these amounts written against "capital assets", it is developed that as of December 31, 1933 there have been added, during the period, assets of the net value of more than $194,000,000.

There is no information upon which can be based any real computation of the values added to the capital assets classification, but the figures do show that in the year 1927 more than $41,000,000 of net values were added; this addition in 1928 amounted to more than $173,000,000 and in 1929 to nearly $44,000,000, with a net addition in 1930 of more than $65,000,000. In 1931 there was a net reduction in "capital assets" of nearly $85,000,000; about $500,000 reduction in the year 1932; and nearly $45,000,000 measures the decrease in the year 1933. These additions and deductions must be computed without any information as to the value of "capital assets" sold, upon which profits and losses were sustained by the industry. The published figures do not show any information on this subject for the years 1926, 1927 or 1928. In 1929 it is shown that profits on the sale of "capital assets" exceeded $27,000,000, but there are no data as to any loss that might have been incurred. Beginning with 1930 the Bureau of Internal Revenue separately tabulated and published figures representing both losses and profits on the sale of "capital assets". In 1930 they reported profits of $6,636,000

(*) See Table XXXIV

and losses of $8,879,000; in 1931 profits of $6,504,000 and losses of $6,908,000; in 1932 profits of $2,332,000 and losses of $14,321,000; and in 1933 profits of $4,795,000 and losses of $9,894,000. These quoted figures can be only partial information, as the actual new additions to plants and equipment and to standing timber can not be gauged without knowing the cost value of these assets which had been sold during the period.

In connection with the liabilities it would be informative to know the extent of the amount upon which interest would have to be paid and the rate of that interest. However, without complete information as to the character of these liabilities only an effective rate of interest upon the total of all liabilities at the close of the year can be computed. This interest rate starts with .0376 in 1926, increases to .0443 in 1928, and is reduced to .0425 in 1931, .034 in 1932 and .0318 in 1933.

One of the larger elements of cost in this industry is the amount of taxes paid other than Federal income tax. Again complete information is not available; hence it can only be stated that beginning with 1926 the reporting corporations paid almost $41,000,000 in taxes, and these taxes were gradually reduced in amount to $30,000,000 in 1931. This latter amount is a reduction of nearly $5,000,000 over 1930, and is the greatest single reduction in any one year of the period mentioned. However, between 1931 and 1932 there evidently was either a sharp reduction in the amount of taxes actually accruing or else this group divested itself of a very considerable amount of values, for the tax burden in 1932 had been reduced to about $23,600,000 and there was a further reduction of about $500,000 in the taxes paid in 1933. By reason of the lack of information these reductions can not be classified or explained but can only be cited from the actual published, and in most cases, audited figures.

In connection with the profits and losses sustained by this industry, it can be pointed out, but without a full discussion by reason of the lack of information, that during this period of eight years when the industry actually incurred a loss of $235,498,000, it reports other income to the extent of $696,943,000. Of this sum about $160,000,000 was received from interest, rents and royalties, about $52,000,000 was received as dividends from other corporations and the industry received from tax free investments the sum of $17,139,000.

The forest products industry is based upon a natural resource and it would be expected normally to find that most of the depreciation and the depletion of the physical assets and of the standing timber would be computed on an amortization basis that would extinguish the assets with the actual resource. The figures presented by the Bureau of Internal Revenue very largely support this general premise, but it is also evident that a very considerable portion of the physical assets are depreciated upon some straight-line basis. For the right years of operation the industry charged out against cost of goods sold, depreciation and depletion amounting to $843,731,000. The percentage of this charge remained fairly constant during the first four years when the industry had a reasonable amount of production. In 1926 this rate was 6 percent of the cost of goods sold, increased to 6.46 percent in 1928, and was reduced to 6.12 percent in 1929. Beginning with the depression, however, the percentage

of the cost of goods sold represented by these items of cost amounted to 7.27 percent in 1930, 7.48 percent in 1931, 9.17 percent in 1932, and 9.18 percent in 1933.

With the vast areas of timber land owned by the organizations making up the Lumber and Timber Products Industry, and with shifting centers of production as well as shifting centers of demand having caused a duplication of production capacity far in excess of the actual effective demand for the products of the industry, it is a noteworthy fact that the data from the Bureau of Internal Revenue (known to not cover the entire industry) show that the capital structure of this not inconsiderable group of corporations (having over $4,000,000,000 of actual assets in 1926) has a remarkably conservative division between that contributed by owners and that contributed by creditors, especially those creditors of the more formal class whose indebtedness is represented by bonds and mortgages.

This industry is faced with the necessity of carrying in its own ownership standing timber sufficient for the production needs of its lumber manufacturing equipment for periods ranging from 20 to 25 years in the Southern Pine Division and from 50 to 75 years in the West Coast Division, with all the attendant carrying charges of a fixed nature such as interest and taxes. It must provide for the carrying of a considerable body of costs into its production schedule that are more in the nature of production or manufacturing costs.

The costs of production constitute the next problem of this industry to be considered.

D. PRODUCTION COSTS

The cost of production in the Lumber and Timber Products Industry is primarily concerned with costs of logging and of manufacturing, plus, of course, general overhead expenses of the unit and the shipping and selling expenses.

Logging includes all operations in the woods from falling (the cutting down of the tree), bucking (cutting the tree into log lengths), skidding and/or yarding (moving of logs from where felled to loading center for transportation to mill), and the many and varied operations of establishing the logging camps on the site of the standing timber (timber or logging chance).

Transportation is the moving of the logs by any of several methods from the logging chance to the sawmill yard or log pond.

Manufacturing is the conversion of the saw log into usable lumber products.

The logging of standing timber is variously performed by casual workers in their own timber lot or on their own small forest holding, by groups of men especially engaged for that particular work either on the timber lot of one owner or of several, as the case may be, and by groups of men regularly employed by the organization actually owning the timber and sawmill. It can be seen that the costs of such widely diversified operations will be from the very sketchiest to the most definitely recorded figures.

In connection with logging costs there also must be considered the general subject of transportation of the logs from the stump to the rail or other transportation head and from there to the saw-deck. This first transportation may consist of skidding over the ground for a limited distance by motor or other comparable power, or by the use of air lines. The second stage is usually by motor truck, spur railroads or common carriers and waterways.

With the logging operations (and transportation) being variously performed under varying conditions of climate, thickness of the stand of timber and size of trees, and differences in the topography from the swamp lands of the Southeastern section where cypress is produced to the steep and rocky mountain sides of the Western section of the United States, it can be seen that the actual cost of the saw log delivered to the sawmill can and necessarily must vary considerably as the conditions briefly sketched above will vary in the different localities.

Along with differences in the kind and the cost of the actual logging of timber will come the cost of that standing timber. Standing timber, as one important problem of this industry, has been thoroughly discussed in a previous chapter. The cost of standing timber will naturally vary depending upon whether the organization has owned and has been paying the maintenance and carrying costs upon the timber

land for a number of years, and upon whether the logger or the sawmill operator is buying a particular stand of timber or is only buying so many thousand feet (log scale) of logs as and when actually removed from the forest stand. The cost will also vary for the same species in different localities of the same general timber range, and also for competing species in entirely different sections of the United States.

In considering the subject of milling or manufacturing costs it will be found that the variations in size and character of sawmill plant will have a very noticeable effect upon the total cost. The number, location and capacity of the sawmills, the cycle of development in the character and size of the mills and the changes in lumber manufacturing centers have been treated previously. The larger plants necessarily must include among their costs a great many items of expenditure generally classed as administrative and overhead, to which the smaller units are not subject in the same degree. The larger plants generally keep a reasonably complete set of bookkeeping records but many of the smaller plants operate with only the sketchiest, if any, definite records of their costs of operation.

With this review of the field, which necessarily can touch only the high spots of the existing differences, it can be seen that the "cost of production" must be subjected to many differing treatments producing figures in many instances of the most doubtful validity.

The history of the industry, from the standpoint of its accounting and its general efforts at development of costs of production, has been altogether a history of relatively small groups of manufacturers in the same general field working together in small associations covering only a fractional part of the industry for the gathering and consideration of costs. It has been variously reported that many of the larger units have very extensive and informative cost records. NRA has not had an opportunity to examine any of these accounting or cost records and has not had an opportunity to directly review the finished products of the systems in the form of definite costs.

Certain associations of manufacturers of certain species have attempted to accumulate costs from their members and to gather these costs into averages for all of those participating in the cost gathering. Apparently there has been a disposition on the part of the member of the industry not to participate in such an undertaking, and consequently practically all of the costs which have been developed are samples of only a part, and a small part at that, of the industry.

The costs of logging and of sawmill operation have also been the subject of study by the U. S. Department of Agriculture, Forest Service, through the Forest Products Laboratory. These cost studies necessarily could be only samples and not actually representative of the entire industry.

Costs concerning the Lumber Industry have been gathered by the U.S. Tariff Commission. (*)

(*) U.S. Tariff Commission Report to the President on Lumber - Report No. 32, Second Series (1931)

This report was issued in 1931 and was based upon a study covering the costs of the year 1929. The basis of this cost study was covered, as to the United States, by 178 mills located in:

The Northeastern States: Maine, New Hampshire and Massachusetts.

The Lake States: Minnesota and Wisconsin

The Inland Empire: Western Montana, Northern Idaho, Eastern Washington, and Eastern and Central Oregon.

The Pacific Northwest: Western Oregon and Western Washington

The Southern States: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas and Virginia.

It was sought to develop the costs based on average cost per thousand feet board measure of dressed lumber, and it was accordingly necessary to develop first the cost of rough lumber and then to add the cost per thousand feet of dressing the lumber. This separation was necessary by reason of the fact that many of the mills did not sell dressed lumber and that in most instances even where the mills did have facilities for the dressing of lumber, a considerable portion of their output was sold as rough green or rough dry lumber. In developing the costs for the production of lumber it was necessary to exclude certain costs that were not involved in the production of lumber and it was also necessary to exclude sources of income and of loss other than those connected with production of lumber.

The normal grouping of costs entering into production of lumber may be described briefly as follows:

1. RAW MATERIAL COSTS

The logs are either produced as a part of the sawmill operation or are purchased from independent loggers or other sources. When so purchased the raw material costs are a known and definite factor. When the logs are produced by the mill the cost has to be ascertained and these costs are:

(a) Stumpage either as a charge covering depletion of timber holding owned or

Payment made on various contractual bases for the privilege of cutting timber under either public or private ownership.

(b) Costs for woods operation, including direct labor, supplies, and expenses of felling the trees and cutting the logs, and of other preparation of the logs for movement to the mill. These expenses may be either actually paid out for the various services performed directly for the logger or sawmill operator, or may be paid in a lump sum on the basis of so much per thousand feet to some one who is superintending such operations.

(c) Transportation of the logs from the stump or woods to the mill includes the operation of the logger's own transportation equipment and payments made to others for the actual transportation.

(d) There is also the element of general and administrative expenses which must be apportioned between logging operations, sawmill operations, planing mill operations, and selling and delivery.

2. SAWMILL OR ROUGH LUMBER CONVERSION COSTS

The varying practices of the sawmills in the different sections of the United States as to inclusion or exclusion of certain factors in sawmill costs require some explanation and some rearrangement of the data assembled. The conversion costs generally include direct labor, operating expenses and supplies for the sawmill proper, with "yard costs" and a proportion of general and administrative expense. Yard costs generally include all costs of handling the logs from the pond or sawdeck to the saws and the handling of the lumber after it is first away from the saws through the drying and refinishing processes to the yard piles, and sometimes includes loading and handling for shipment.

In the Douglas Fir Division a part of the "yard costs" usually are charged to rough lumber and a part to dressed lumber.

In the Southern Pine Division in the Inland Empire and in the Northestern Division "yard costs" are not commonly divided between rough lumber or sawmill operations and planing or dressing operations.

Shipping or loading expenses consist of costs incurred in loading the lumber, either rough or dressed, for shipment. And again the method of treating these costs varies in different mills. Such variances range from total inclusion of such costs into and with "yard costs," to a partial segregation to rough lumber costs and a partial segregation and tabulation with selling expenses and with costs of dressing lumber.

It is necessary also in developing costs to give consideration to and to uniformly treat various methods used by the sawmills in the same

divisions and between divisions in the handling of credits to the cost of production. These credits normally come from the sale of waste and of some by-products. Other credits, depending upon the specific operation, might come from the sale of electricity or power generated as a part of the sawmill operation. It is necessary also to consider credits for certain lumber products, especially lath and similar items, which in some divisions amounted to considerably more than in other divisions.

3. DRESSING OR PLANING COSTS

These items of the cost of preparing the finished lumber for market include labor, operating expenses of the planing mill, of the dry kilns, and an apportionment of general administration expenses.

4. GENERAL EXPENSES AND OVERHEAD

Incidental to all of the operations up to the production of the rough or dressed lumber must come those expenses generally classed as overhead items, including interest, depreciation upon machinery and equipment, and taxes other than Federal Income Tax.

The depreciation of the Physical property as distinguished from the depletion or exhaustion of the natural resource of standing timber is commonly computed in this industry upon a basis that will write down the value of the plant and other physical properties with the declining quantity of raw material available. This is especially true when the sawmills own the timber, but where, as in the West Coast Division, many of the sawmills are operating on logs purchased from commercial loggers and own very little if any timber, such depreciation is computed upon one of the accepted straight line bases.

In the development of costs it has been the practice to allocate the general expenses, including depreciation and taxes, to the various types of operations carried on.

In the final tabulation of the cost data it is sought, by selection and tabulation, to show the averages computed according to species in the various sections of the country for the character of the operations.

As costs have been developed by the various agencies concerned, the above detailed plans has been generally followed. This is especially true of the cost data gathered by the Western Pine Association and by the Southern Pine Association, and was more or less the general policy of costing adopted by the Lumber Code Authority as discussed in the following sub-chapter.

5. HISTORY OF COSTS UNDER NRA

One of the problems that faced the industry and the NRA, from the earliest discussions concerning the Code was, in general terms, "how could the industry increase hours of employment and hourly wages and get back at least the 'out-of-pocket costs' of production of lumber?"

This was especially troublesome in the face of the known facts that:

(a) the industry had been operating at a loss for a number of years.

(b) stocks of lumber in the hands of the manufacturers were very large.

(c) demand for lumber had been decreasing for several years.

(d) the construction industry, which annually absorbs a considerable portion of lumber, was at the absolute low point of its history.

As a partial solution of this problem it was mutually agreed that any of the additional charges incident to the Code could be assumed by industry only when such increased costs could concurrently be recovered by compensating adjustments in prices for lumber and timber products. It was realized that this principle involved the application of minimum prices, and in recognition of the fact that there must be protection of the public against the abuse of the power to fix minimum prices there must necessarily result a formula for determining cost of production. It was therefore proposed that weighted average costs should be determined and that lumber and timber products should not be sold or offered for sale at prices which did not cover such costs.

The record is clear that industry was not especially interested in determining pure costs of production, and apparently the NRA also was not, at least in the beginning, especially concerned with this matter. It seemed to be the paramount consideration on the part of both industry and NRA that "cost protection" was the object and the aim rather than "cost of production."

Throughout the record, the recommendations and the reports in connection with the Code of Fair Competition for the Lumber and Timber Products Industries there runs this continued reference to and consideration of "cost protection" and direct "out-of-pocket costs." Also throughout the record runs discussion of the necessity for the establishment of a "formula for cost protection" and the necessity of establishing a "minimum price" that would permit the industry to maintain itself on the price which it could secure for its products.

The record of negotiations leading up to the presentation of the Code also is replete with discussions concerning debatable items that must be in some manner included in any formula for the development of cost of production but which might or might not be included in a formula for cost protection. These debatable items were:

(a) value of stumpage.

(b) depreciation.

(c) cost of conserving and replacing as much timber as was harvested.

Article IX of the Code was titled "Cost Protection" and gave the Code Authority the right to establish and revise minimum prices f.o.b. mill "to protect the cost of production of . . . . . lumber and timber products," when in its opinion it was able "to determine cost of production" as defined in Section A, Article IX. It was also provided in Article IX of the Code that "current weighted average cost of production . . . . shall be established by uniform accounting practices," and then followed an itemization of all of the direct and indirect costs of production and sale of the product and the administration of the properties. There were certain limitations, however,

(a) selling costs should not include advertising or trade promotion

(b) insurance should not include insurance on standing timber.

(c) taxes should not include amounts on standing timber in excess of a 12 year supply.

(d) interest was not to include any charges accruing on obligations to carry timber in excess of a 12 year supply.

It was also specified in Article IX, that depreciation should not be included "until such time as the Authority shall have formulated and secured the general application by the several Divisions and Sub-divisions of the methods of accounting" by which the depreciation was to be accurately ascertained . . . . It was specified also in Article IX, that depreciation should be computed "on straight line method and based on fair value or the cost whichever is lower . . . ." and that this item should also include amortization of investments in logging railroads, docks, and other logging and plant facilities.

The cost of production for each species determined as specified in Article IX, was to be allocated by the Authority to the several items or classifications of lumber or other products for which minimum prices were to be established. It was specified that "weighted average minimum price of all items and classifications for each species shall not be more than cost of production" including all of the items specified in the cost formula nor "less than said cost after deducting capital charges of depreciation and the fair market value of standing timber that was to be determined by the Administrator."

Thus it will be seen that there was erected under the Code, a so-called formula for ascertaining cost of production when the actual and avowed purpose of the industry was to develop facts as to costs and that as to each Division or Sub-division or group of members of the industry these costs were to be developed on "the weighted average" of all in the particular group of manufacturers and that this weighted average cost of production was to be applied purely for the purpose of protecting the minimum prices that had been or were to be established by the Code Authority. All of this involved proceeding was to be carried out by the Code Authority of an industry of which it was stated "adequate, uniform, and realistic accounting particularly among small establishments is not characteristic of this industry."

Here was an industry composed of at least 17,000 manufacturing units operating in practically every state of the union, that, most emphatically, was not cost conscious. It was not a new industry, and although the principal producing centers had shifted very materially, in general the manufacturing processes remained largely similar. It had successively passed through many periods of famine and of plenty, but up to, and even through the code period the great majority of the members of the industry had not been educated to the necessity of knowing their costs of production.

It cannot be overlooked that the industry does offer some considerable obstacles to exact costing. The products of the industry are numerous, and many of the variations between products are too often matters of expediency, rather than actual differences in character of product.

Costs of production can and should be determined for the industry. Only with true and dependable costs as a background, can the industry hope to find its way out of the difficulties in which it is now immersed, and to solve its many problems.

The determination of direct costs is not unduly difficult. It is in the interpretation, analysis and distribution of indirect costs that the principal difficulty is usually encountered. With the wide geographical spread of this industry and with the necessity of compiling costs for the small neighborhood sawmill and the vast manufacturing plants of the West Coast Region, the task of determining true costs for this industry was most unlikely of successful accomplishment. The determination of "weighted average out-of-pocket costs" with all of the indefinitenesses comprehended in such an undertaking would be the accomplishment of a super-man. It is not deemed unfair either to the industry or to NRA to state in retrospect that had the industry and NRA sought to establish true costs of production for individual sawmills and then to properly and intelligently interpret these facts, many of the difficulties met in attempting to utilize the methods of expediency that were adopted in the attempt to determine and to recover out-of-pocket costs and to protect prices would not have been encountered. Both industry and Government have profited by this experience and it is safe to state that neither would again embark upon such an indefinite project.

Doubtless, one of the fruits of the code experience has been a cooperation between manufacturers in a division and between divisions, and the consideration of problems common to them all.

Under the authority granted in Article IX of the Lumber and Timber Products Industries Code the Code Authority began the publication of price bulletins in October, 1933, and completed the issuance of this first edition in December, 1933. These minimum prices thus established, were based upon data incomplete and unsatisfactory for the purpose of determining cost. Data had been received from many of the divisions of the Lumber Code Authority. A considerable portion of this cost data was available for study by the Lumber Code Authority late in December of 1933. This material was plainly labeled "Cost Substantiation Data." Upon this information other price bulletins were issued. The accountants for the Lumber Code Authority, in discussing this cost substantiation data, raised many points as to its authenticity. It was recognized that the costs that were to be secured were not upon the usual accounting basis but were purely upon an industry basis as specified under the Code. It was recognized that much of the information first gathered was not reliable and that the basis of cost gathering for purposes of later minimum price substantiation must be changed. Thereupon, the industry, acting upon advice of its Code Authority, developed a new cost questionnaire which was issued to industry members in April, 1934, and requested submission of cost data for January, February, and March, 1934.

This latter-mentioned cost data was much more definitely arranged than any of that previously submitted and, under reasonable conditions of compliance on the part of the sawmill operators, would have supplied the Administration and the Code Authority with standardized data from all divisions. Naturally, many of the members of the industry were not accustomed by past practices to the orderly and systematic development of cost data; others were not interested enough to present such data and many others had no records, so there was considerable variation in the extent of their compliance with the request for this material. These variations naturally tended to destroy a considerable part of the inherent worth of these cost data.

One of the deficiencies in the cost data submitted under the Code Authority was lack of inventories. Data concerning inventories of raw material and of finished product were ignored in the preparation of the cost data for the first three months of 1934, although the industry was advised in November, 1933, that it then appeared imperative for all Code Division and Sub-Division Authorities to prepare their calls for information in such a manner as would require the individual operators to furnish the inventory material. (*)

(*) L.C.A. 33-45, dated November 30, 1933 - C. Arthur Bruce, Executive Officer, Lumber Code Authority.

The cost data for the first three months of 1934 were largely in the hands of the Lumber Code Authority in Washington early in June, 1934. In reviewing these data many inconsistencies with established accounting practice and even with the formula expressed in the Code were brought to the attention of the Code Authority by their own department of Costs and Prices and by the accountants under contract.

Many revisions of the cost data were necessary, ranging from the substitution of estimated for actual costs to the necessity for virtually a complete abandonment of the procedure outlined in Section IX of the Code which also involved the changing of the Approved Cost Formula published as a part of that Article.

The changes most far-reaching in effect on actual costs were as follows:

(a) Substitution of approved stumpage costs for actual stumpage costs (*)

(b) The arbitrary determination that all depreciation must be computed on a straight line basis (*)

(c) The invoking of a new principle - "adjustment of invariable overhead costs."

Certain of the incongruities in the cost data were as follows:

(a) The failure to provide comprehensive data concerning grade and size outturn of the product of the saw-log

(b) The computation of depreciation on a straight-line basis and on present value of assets, when it had previously been computed on the diminishing supply basis, with production only a fractional part of the usual pre-depression production and of the capacity to produce.(**)

For the first time cost data were sought on the basis of all mills in a division without regard to the species predominating in the production. Such procedure did not particularly affect the costs developed in the Southern Pine Division, for in these states the production of the mills is generally predominantly Southern Pine, although in some sections some cypress would be cut and in other sections some hardwoods would be encountered. In the western area where Douglas Fir, hemlock, spruce, Ponderosa pine and Idaho white pine are generally found intermingled in timber stand, the development of costs by areas rather than by mills producing specific species offered considerable obstacles to the development of costs for this period comparable to costs developed for prior periods. In most instances the cost for the production of combined species has generally been considered the cost of the principal species. Thus we find in the West Coast Division

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(*) This was mandatory under the Code.

(**) Mandatory under the Code.

where Douglas Fir, spruce and hemlock are interningled, that the costs are considered as representative of Douglas Fir. Similarly, in the Western Pine Division in which Ponderosa and Idaho white pine, with some Douglas Fir, are the major species, the costs that were developed were considered as representative of Ponderosa pine production.

Costs for southern pine for the years 1921 to 1930 shown in the table published by the Southern Pine Association (*) in July 1931, present a very informative and interesting group of data as to costs of large mills, each producing more than six million feet per year. The mills, some 100 in number, are reported to have produced over 32-1/2 billion feet during the period, or an average of 3-1/4 billion feet each year, or 32-1/2 million feet per mill, per year.

This information is presented in Table XXVIII, and interpolated in that table are data secured by the U. S. Tariff Commission. (**) Also interpolated with these data are costs developed from the industry questionnaires for January, February, and March, 1934, which were submitted to and reviewed by the Research and Planning Division, NRA. (***).

In considering the data displayed on this table it should be borne in mind that the data for ten years from 1921 to 1930, inclusive, were all developed on the same set plan, but that the U. S. Tariff Commission figures were developed on a slightly different base and do not include shipping and selling expenses. It should be noted that the Southern Pine Association presented costs of $25.80 per M feet, for the year 1929, including shipping and selling expenses amounting to $2.13 per M feet, and the U. S. Tariff Commission for the same year, 1929, developed costs of $25.41 per M feet without including any shipping and selling expense. Further analyzing those same figures it will be seen that one of the principal items of difference was the stumpage cost which the Southern Pine Association showed as being $6.06 per M feet, and the U. S. Tariff Commission found to be only $5.23 per M feet. Other differences will be noted in comparing the items but not all of these differences are as great as the first comparison would indicate. The Southern Pine Association in determining the costs segregated all depreciation amounting to $1.62 per M feet, but the U. S. Tariff Commission did not segregate this depreciation but included it as a part of the costs of the various operations, principally in logging and milling.

The costs for Ponderosa pine and Idaho white pine, both species being largely produced by the same mill groups, were presented in reports to its members by the Western Pine Manufacturers Association,

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(*) Economic conditions in the Southern Pine Industry presented to U. S. Timber Conservation Board by the Southern Pine Association, page 53, (July, 1931.)

(**) U. S. Tariff Commission - Report to the President on Lumber - Report No. 32, pages 21-22 (1931.)

(***) Unpublished report of Research and Planning Division, NRA, "Cost Protection Prices and Cost Substantiation Data," dated May 6, 1935.

as follows:

Operating Costs 1927 - Circular #3920, 3/21/28
" " 1929 - " #4446, 5/23/30
" " 1932 - " # 431, 3/25/33
1934 Production Costs in Circular #881, by the Western Pine Association.

This information is presented in Table XXIX with data collected by the U. S. Tariff Commission (*) for 1929, and also cost data tabulated by the NRA (**).

It will be noted that the arrangement of the costs as compiled and published by the Western Pine Association varies somewhat from the detail of costs presented by the Southern Pine Association. This variation in presentation of costs by two groups of manufacturers in different sections of the United States who produce competing products, to a very considerable extent, is just another evidence of the general attitude of the members of the industry toward one another, and of one group toward another group. The failure on the part of the members of the industry to agree among themselves as to a reasonably standard form or method of presenting their costs of operations crystalized when, under the Code, it was imperative that the industry should, through its Code Authority, present cost data reasonably uniform in form and content.

The Code of Fair Competition for the Lumber and Timber Products Industry did not provide that NRA should have any direct supervision over or control of any of this cost data. There were no provisions making it possible for NRA to pass upon the sufficiency of the cost data as secured or upon the minimum cost protection prices that were to be established by the Lumber Code Authority and based upon such cost data.

It is true that a representative of the Division of Research and Planning of NRA had attended a conference in Chicago in April, 1934, when the Cost Committee of the Code and the cost representatives of the Divisions met to develop the form and content of new cost reports which were to be used for the development of the costs by each of the various Divisions for the months of January, February, and March, 1934.

The cost data was collected and collated by each Division and reported upon by it to the Lumber Code Authority. The Lumber Code Authority performed a review of such data through their own Cost and Prices Committee and their own accountants under contract and based all of their actions upon such reviews. The Code did not require results to be submitted to NRA for approval.

NRA did not have access to any of this cost data until late in June 1934 at which time the Lumber Code Authority was moving toward the

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(*) U. S. Tariff Commission- Report to the President on Lumber - Report No. 32, pages 21-22.

(**) Unpublished report of the Research and Planning Division, NRA, "Cost Protection Prices and Cost Substantiation Data," dated May 6, 1935.

declaration of the emergency as finally promulgated by Administrator Johnson on July 16, 1934. Between June 20 and July 16, a great deal of this cost data was presented to the Research and Planning Division of NRA. This Division reported adversely upon such cost data as it had been able to review but the emergency order was signed and included most of the already published price bulletins then in effect. Thereafter, from time to time, the Division of Research and Planning made reports upon specific groups of cost as it was enabled to progressively complete its review. In this review work, many questions arose as to the adequacy of the data submitted. These questions were referred to the Lumber Code Authority for answer by them or by the Division affected. The answers to the questions and much additional information developed as a result of the questioning was all included in and given effect to when final reports of the Division of Research and Planning were made as to the cost of production for all of the divisions and subdivisions of the Lumber Code Authority which had been in existence on March 31, 1934.

The entire and voluminous record covering the investigation and including report statements of costs for each of the divisions with appropriate explanations, has been prepared and is in the files as "Report on Project, Cost Protection Prices and Cost Substantiation Data of the Divisions and Subdivisions of the Lumber Code."

It would be virtually useless to enter into any discussion and comparison of the cost data submitted by the industry as referred to above. That data now is purely historical and those interested in details may peruse them in the above mentioned report.

The objectives of the National Industrial Recovery Act (declared and interpreted) were sought to be attained under the Code of Fair Competition for the Lumber and Timber Products Industries and the question will long be mooted as to whether the industry and the National Recovery Administration, either, neither, or both had adequate concept of the scope of problems clamoring for solution and well thought out, workable methods for their solving or if the necessity to compromise differing views to reach Article IX of the Code made abortive all attempts under it to orect "minimum cost protection prices" founded upon "weighted average cost of production."

Further segments of this whole problem are discussed in the following chapter on Prices and Mill Realization.

E. PRICES AND MILL REALIZATION

1. Prices

What is price? When, and where and for what steps in the movement of lumber products from the sawmill to the ultimate consumer should the price of that lumber be considered? These are some of the questions that must be answered before any general discussion of the price of lumber can be intelligently carried on.

Prices under the competitive system, is an expression of the meeting of the minds which represents a compromise between the buyer and the seller. It is not what the buyer would like to secure nor is it exactly what the seller wishes to pay. Generally, a price is made in the open market and always is affected with a public interest. Producers are balanced against consumers as producers wish to sell at the highest possible price obtainable and consumers wish to buy at the cheapest price possible. Each is controlled, to a great extent, in the desire to drive the best possible bargain and is prevented from overreaching himself by the rivalry of other producers who sell and of other consumers to buy. The price so determined cannot be an absolute thing but is always relative and in the abstract the contractions of supply and demand meet to make a price, which, after a fashion, represents liberty of contract between the buyer and the seller.

Price in orthodox economics is generally considered to be an expression of the marginal cost of production, but price and cost are in different realms. Price is a definite sum generally quoted in the market and always known to the buyer and seller. Cost, however, is seldom definitely known as it is usually derived from the ramifications of the industrial process by involved and technical calculations. Whatever may be the philosophy and the theory of prices and of costs, it is a self-evident fact that over a reasonably extended period the price of a manufactured article must be in excess of the cost of manufacturing and distributing, or those agencies which are involved in those processes will eventually fade out of the picture, usually through the bankruptcy courts, after all invested capital has been exhausted and all possible credit has been secured.

A price, even though it may be based upon cost is relative and not absolute in the majority of instances. A specific price may not return cost, but the price and the cost of the article may be related to the price and the cost of other articles manufactured in the same processes and these prices and costs all taken together merge into composites that are economically sound.

Prices of lumber products have been, and continue to be, set largely on the basis of this principle. It is known that the cost of production of the various articles manufactured and of the various manufacturing plants would vary purely and simply upon the basis of their cost structure and of the market for the articles manufactured. In the Lumber Industry, as in every other industry having a multiplicity of products, many of which are classed as major products and many others

of which are classed as minor products but all resulting from the same process of manufacture, it was only natural that an allocation of the cost of production would be made largely upon the basis of the price which these different articles would bring in the market based upon past experience.

Every foot of rough lumber produced by the saws from the same saw logs usually is considered to have cost exactly the same in raw material, direct labor, and manufacturing overhead. But some of the lumber produced may be of the poorest grade and sell at the lower end of the price scale and some may be of the highest grade and sell at a corresponding high price. Actually, the low grade product must be sold at a heavy loss and the high grade lumber will return a relatively large profit if exact and true costs are to be considered. It is common practice and in conformity with the above principle to relate the costs to the prices of the products so that each product resulting from a common process will theoretically absorb its relative part of the cost and return its relative portion of the profit.

When and where are the prices to be considered? Is the price at the mill to be taken as the criterion and is that price at the mill to be considered when made to the wholesaler or when made to the mill directly to an industrial or construction consumer or to a retailer? It is a fact proven by an extended survey of prices quoted in these different fields of activity that exactly the same size, species and grade of lumber would be quoted at a retail price but that the products would move in different quantities under that retail price and at every possible figure from that price downward to an even below the quoted mill price for the same product. With the constant competition existing between the sawmills, the wholesalers, the commission men and the retailers for the consuming market, the price of lumber for years has been largely dependent upon the energy of the buyer in exhausting the various channels through which his needs could be met and in pitting against one another each of these various supplying agencies.

The competition between manufacturers and distributors of lumber products for the market is not the only competition that the Lumber Industry has been compelled to meet. There has been the competition of articles readily substitutable for the lumber products. There has been the change in fashion and in type of building construction and there has been the barring from the market or large sections of the market of the lumber products by the building restrictions or regulations of urban centers.

The supply of an article on the market, coupled with the demand for that article, must necessarily have a very considerable effect upon the price at which the article can be sold. With all of the economic factors as before mentioned pressing for the production of lumber and with very little, if any, cohesion between the manufacturers who were waging an independent fight for individual existence, the price of lumber has not reacted to many of the economic theories and principles but has been largely dependent upon the old natural law of the survival of the fittest.

The price of lumber is a composite of these many elements and is not solely dependent upon, nor is it positively controlled by any one of them.

The Lumber Manufacturing Industry is quite generally spread throughout every State in the Union. There are, of course, certain well-defined centers of production and it has been shown that the principal manufacturing centers are now in the Southern States for Southern pine, in the West Coast region for Douglas fir, and in the Western Pine Region for Ponderosa pine. It has also been shown that the principal consuming centers are in the Central States with Chicago, Illinois, as the principal distributing center, and in the Northeastern States with New York as the principal distributing center. Lumber in some of its multitudinous forms is consumed in every vicinity of the United States.

With sawmill products ranging from rough green lumber and timber to the highly finished, kiln dried, planed and polished cabinet woods for mill work and interior finish purposes, the products to be used for this discussion will be limited to the most common species, grades and sizes. After all, the commonly used species, grades and sizes make up the preponderant part of the products of the industry.

The question of price then, will be considered from the standpoint of the sawmills (manufacturers), the wholesalers and the retailers, and the ultimate consumers of lumber products.

With the progressive westward and southwestward movement of population, the production centers moved from the northeastern states to the Lake and Central States and then to the South and last to the western region.

Easily accessible stands of commercial saw timber in close proximity to the demand, established and for many years maintained lumber prices at such a level as to make it the cheapest and most favored building material. When the softwood area of the Lake and Central States regions had been effectively eliminated from the ordinary softwood competition by high costs and changes in use of the lumber, leaving the Southern Pine Region as the principal softwood producing center, the distance between producing and consuming centers involving high transportation costs began to register its effect upon the price of lumber to the consumer.

The reaction of this increase in price was first to bring back into production some of the mills in the former production centers which could eke out a profit on some marginal production; another effect was to foster the small mills that could readily move to small areas of timber that by reason of distance from established mills could not have been advantageously worked by them. Then as distance increased between production and consumption centers and as production of established mills became more costly as the result of increasing inaccessibility of the standing timber, the West Coast region came into production. As has been discussed there were other reasons for this region to come into production, but after all the selling price of lumber in consuming centers was the major consideration.

The southern Pine Region had cut away all of its readily accessible timber contiguous to waterways. Consequently, railroad transportation was necessary to get the product to the eastern seaboard, to the southwest, and to the middle west consuming centers. At this point prices began to regularly reach higher levels and about this time also came the opening of the Panama Canal. Prior to the opening of the Panama Canal the general competitive position of the regions producing softwood lumber was about as follows: The Eastern States, the Lake States and the Central States offered but very little competition to Southern pine for softwood lumber in construction and in most industrial uses.

Prior to the opening of the Canal, Douglas fir from the West Coast was practically barred from eastern seaboard markets, but with the opening of the Canal, this West Coast Region, by reason of low water transportation rates, was enabled to deliver its products on the eastern seaboard and to overhaul to many eastern territorial consuming points in direct competition with rail moved Southern pine Lumber.

The transportation cost of lumber has always been a very considerable part of its cost to the consumer, and during the Code period when minimum prices at the mill were in effect for the manufactured product and when the retail dealers, also under a Code, were required to limit their cost of handling to certain definite percentages of markup on their cost, reasonably comparable figures could be secured. Tables LI and LII, in Appendix II, give comparisons of these costs at Chicago and at New York. These costs are quite definitely divided between manufacturing costs, freight, and the costs of the retailer, and all of the data as applying to each of the three principal softwood producing regions were gathered under the same general plan and on the same general formula. It will be noted in analyzing the information of Table LI that the freight rate on Douglas Fir to Chicago, Illinois, was 35.40 per cent of the total cost of the lumber at retail. This compares with manufacturing and distributing cost of 33.17 per cent and with retail handling costs of 31.27 per cent of the total cost.

This table very definitely brings out the preferential position of Southern pine and Western pine as compared with Douglas fir in the Chicago market, as it is shown that the transportation cost of Southern pine represented 21.58 per cent of the total cost and that Western pine could be transported to the Chicago market at 22.92 per cent of the total cost.

Considering Table LII representing these costs at New York and considering only the Douglas fir reaching that market by water, these data show that Douglas fir were practically excluded from the New York market on rail transportation, but that Douglas Fir moving by water and although paying in freight for transportation charges an amount equal to 23.69 per cent of the total cost, could still be laid down in New York at practically 910 per M less than Southern pine moving by rail.

These instances will serve to represent in general the proportionate part of the final cost of lumber borne by the transportation charges of the material from producing to consuming centers.

The cost of transporting lumber from producer to consumer, being a very considerable factor in the price of lumber, has been the point about which has turned from time to time, the fortunes of considerable sectors of the sawmill industry. With the turn of the century Southern pine was in undisputed lead over all other lumber producing areas. It then produced nearly 32 per cent with the Lake and Central States' production amounting to about 2[illegible] per cent and the Western States producing less than 10 per cent. Ten years later, Southern pine production was 44.9 per cent, the Lake States 12.3 per cent, and the Western States 18.4 per cent of total softwood lumber produced. By 1919 the Southern pine production represented 46.6 per cent, the Western States 29.2 per cent, and the Northeast and the Lake States were out of the competition. When 1929 arrived, Southern pine had surrendered dominance of production to the Western States and Southern Pine in that year produced 41.9 per cent, the Western States 43.4 per cent of all softwood production and in 1931 these percentages were Southern pine 36.2 per cent and Western States 50.7 per cent of total production.

Southern pine had by this time cut out most of its virgin timber adjacent to the mills; costs had increased, and West Coast fir could and did come through the canal and cover the eastern seaboard with water rates and backhaul rail rates and meet or undersell Southern pine in those markets.

For many years the Lumber Industry had been primarily a sawmill industry shipping some of its products to other mills and factories for further fabrication. As the producing centers receded farther from principal industrial consuming centers and costs of manufacturing increased and the transportation costs continued to become an increasing factor in the cost, lumber fabrication tended to turn back upon the sawmills.

To eliminate the transportation cost on a great deal of the waste that results from manufacturing and fabrication, the mills and plants for the utilization of lumber tended to desert their former locations and were established adjacent to or as a part of the sawmills producing the lumber. This integration of the industry has eliminated competition for market at a price on a very considerable portion of the mill production of certain grades and species of lumber. This is particularly true of the manufacture of sawed wood containers where the shooks now are largely manufactured in plants connected with sawmills and the finished shook material shipped for assembling at the plants where used.

Price had always been the factor influencing control or dominance of market and thus largely governed sectors of the industry in its desire to obtain a profit, and then, almost in desperation, to permit liquidation of and at least a partial salvaging of the investment in

standing timber and in sawmill equipment. Because of this element of price and its effect upon the industry, many efforts have been made to control or to establish a bottom for prices. Mostly these efforts were by small groups and had no real and lasting effect, as it appeared to be impossible to control any considerable number of the members of the industry. But when certain sections of the industry had gotten together on a program that bade fair to be successful, the anti-trust laws were invoked and industry plans had to be abandoned.

a. Price under the Code.

The NRA Code for the Lumber and Timber Products Industries offered another opportunity for the industry members to eliminate cut-throat competition and the continued destruction of industry units through bankruptcy by the establishment of a price that was planned to return to the producers at least the cost of production.

With all of the known difficulties surrounding the establishment of a price for products manufactured and sold throughout the length and breadth of the United States and with all possible gradations of products manufactured in the widest range of factories as to equipment, labor and marketing ability, the Lumber Industry boldly set out to determine "minimum cost protection prices."

The record of the hearings precedent to the Code contains much testimony or evidence on minimum prices and cost protection. The industry understood that it must accept some minimum hourly wage rate which would add materially in most sawmills to the cost of producing lumber and it bargained for and obtained the right to establish minimum prices at which its products should be sold. The industry selected as its point for the determination of these minimum prices the movement of lumber from the sawmills or the manufacturer. It sought to determine what these minimum prices would be upon the basis of "protecting the cost of production." The industry and NRA were both definitely fearful of the effect on the public of the establishment of these minimum prices and realized and recognized that there must be some protection for the public against the abuses of such a power. It was the purpose to establish a mathematical formula for determining the cost of production and then to limit prices that were to be established so that there could not possibly be any element of profit included in such minimum cost protection prices. The theory was a good one but the practical obstacles to its reasonable performance were many and almost insurmountable. The difficulties surrounding the securing of cost information and the establishment of the basic average of cost have been discussed elsewhere in this report.

With the establishment of prices at the sawmill there necessarily arose the problem of determining what was or would be the proper additional cost of the handling of the lumber in its various stages from the mill to the consumer. It was sought to establish various fair trade practices which largely were the expression of past methods of doing business and to define and to control the activities of the principal handlers of lumber in so-called wholesale quantities. At this point the varied activities of the mills in the sale of their

products, in conflict as they were with what the wholesale trade considered to be their rights and duties, and all of the self-preservation tactics of the mills and the bargaining capacities of the buyers entered to create dissension and to establish a problem in the operation of the Code that tended largely, through its non-solution, to the final breakdown of the minimum price and emergency provisions.

The industry was not adapted to the maintenance of minimum price for its multitudinous products, for it has been accepted almost as an axiom that if minimum prices are to be established there must be cohesion in the industry, and administration facilities of the organization capable of maintaining compliance must be available and there must be a recognized standard of products and a relative balance between supply and the demand.

Pursuant to the provisions of the Code, the Code Authority for the industry proceeded to establish minimum prices and publish these in "Minimum Price Bulletins." These minimum prices as published generally affected the industry members as would any other price stabilization plan by creating serious dislocations in the industry. Many of the operating units were adversely effected by these minimum prices and there were many complaints that such minimum prices were so low as to further contribute to the bankruptcy of the organizations. There were material benefits resulting, naturally, as the low cost mills were able to produce and tonmake a profit which they had not been able to do under prior conditions. The stabilization of prices naturally stimulated output which, of course, in this industry was to a certain extent controlled by the production control features of the Code, but in most cases the operators manufactured their quota whether or not there was a market for the product. Most of the established minimum prices were somewhat in excess of prices that had been prevailing theretofore and this tended largely to a reduction in the effective demand for the lumber products.

By June, 1934, the Code Authority for the Lumber and Timber Products Industry realized that the minimum prices were not being lived up to by the manufacturers. The price structure had also been seriously affected by the failure of the wholesalers to be governed by the Code as it was interpreted by the Lumber Code Authority. Price cutting had become prevalent and when the Code Authority requested the NRA to start prosecution there was immediately raised the point that the Government had not had a hand in the making of these prices and that it could not and should not set out to prosecute violators of regulations not made by the Government. On the other hand the industry claimed that in approving the Code the Government had approved the right of the industry to set prices under the Codal limitations and that therefore it (the Government) was obligated to enforce these provisions.

These conditions were terminated by an Order of Administrator Johnson issued on July 16, 1934, declaring an emergency and adopting and promulgating with some changes, as Government prices, the prices that had been set up by the Lumber Industry in its minimum price bulletins.

With these minimum prices becoming prices set by the Government, the storm of protest against these prices and other factors in the Code became of such proportion that the Administration was compelled to take cognizance of it, and the hearing on minimum prices in the Lumber Industry was called for December, 1934. As a result of the hearing an Order was issued late in December, 1934, withdrawing the minimum price provisions of the Code.

Many and dire prophesies had been made as to the effect on the industry of this withdrawal of minimum prices but none of these forecasts have come true, as the industry has continued to act and react just about as it had throughout most of the later years of its existence and there was no sharp readjustment of prices, in fact, freed from control, prices rose.

Between December, 1934, when prices were withdrawn and May, 1935, when the Supreme Court rendered its decision in the Schechter case, there had been considerable grumbling and discontent in the industry because many of the members were still abiding by the minimum wage provisions and were living up to production control schedules set by the Code Authority. With the complete abandonment of Code activities the industry in general has functioned very largely in a normal way. The members of the industry apparently have retained many of the fruits of the cooperation resulting from their association under the Code.

E. PRICES AND MILL REALIZATION

2. Mill Realization

There is almost a complete lack of authentic data upon the subject of realization from the product of the mills during any period of time and especially during periods covered by available data as to cost of production. Certain associations of lumber producers have made attempts to secure costs, as previously discussed, but the record is almost a complete blank on the subject of mill realization or value of mill product until the Code period. Consequently this discussion must be almost exclusively concerned with the data submitted during the Code period.

Differences of opinion exist as to what is the proper definition of "mill realization." In some branches of the industry mill realization is considered to be the net return to the manufacturer for the product sold. This is not either gross sales or net sales, but is, in many instances, net sales less freight paid and less selling commissions, and in many cases also less cash discounts. Mill realization is also frequently considered to be the value of the mill production whether sold or not. In other branches of the industry mill realization may mean any combination of the above bases and the mentioned deductions therefrom.

Mill realization finally, of course, is what the product actually brings in cash or other values when such product is moved from the possession of the manufacturers. As the ultimate factor this can not be ignored, but it was also realized that in determining prices under a system governed by an arbitrary maximum of cost of production, the quantities of product manufactured but not disposed of must be considered.

It has been more or less common practice in the industry to consider

gross mill realization for all lumber products to be represented by the selling price of certain grades and sizes of finished lumber expanded by the calculable but indefinite and unfixed factor of the "average outturn of the average log." In no instance within the available record has any one mill, let alone any sub-division or division of the industry, proved this hypothetical mill realization by definite facts concerning sales or saleability of the product manufactured.

The industry itself has recognized the fact that such a computation of average realization based on the average outturn of the average log would be subject to many variables. Two sawyers working in the same mill and on exactly the same log would not produce similar grades, sizes and quantities of rough green lumber. The rough green lumber as it came from the saws might be subjected to variations in grade and tally, and that most certainly the handling of the rough green lumber in air drying and especially kiln drying would cause variation in grade, depending upon the treatment accorded it in those operations.

During the depression period especially, if not before to the same extent, there had been "sweetening of grades" if not the actual billing of a certain quantity of higher grade of lumber as and at the price of a lower grade.

With all of these conditions existing, or with any considerable number of them entering into the question of mill realization, it is patent to even the most disinterested observer that any mill realization computed upon an unsubstantiated average outturn of the average log would be a very weak reed upon which the industry could lean. But this was the only type of information submitted in support of mill realization and without the backing of any considerable data concerning sales for any particular period to be offset against or considered with the cost, quantity and grades of lumber produced during that period.

It is realized that an attempt to develop an average figure of mill realization for any specific period will be a difficult, if not an almost impossible procedure. The character of the product of the mill will differ as between periods depending upon:

(1) Character of the timber from which the saw logs are being produced

(2) Efficiency of the machinery, equipment, and management of the mill

(3) The efficiency of employees

(4) Competitive position of the industry and the particular producing unit being considered.

With the industry producing lumber, its final usable product, of many different and competing species, with variations in manufacture as previously outlined and with commonly used trade terms having meanings different from those given in the dictionary and the commonly accepted meaning of those same words, it can be readily seen that even reports accurate as to quantity and unit price, only cross sections of the

determination of an average price for the product or outturn of the log.

It was accepted as a basic conclusion by NRA that this bothersome question of mill realization could not be satisfactorily answered unless and until the reporting units of the industry accepted it as a fact that the mill realization could be determined only on the basis of inventory of production unsold and on hand at the end of any cost accounting period, coupled with analyses of actual sales. The NRA realized just as clearly as did the industry that this basis was not absolutely correct for, until the manufactured product was actually sold, influences of weather and of time were tending to degrade that product.

An important factor in determining mill realization for the products manufactured is the comparability of the several species. In certain markets and for certain uses Southern pine lumber of a given grade and size commands a somewhat higher price than the corresponding Douglas fir lumber. It is recognized that the proportion of the higher grades is not so great in Southern pine as in Douglas fir. While Douglas fir and Southern pine are competitive woods and interchangeable for many uses, they are not the same species or identical woods, and for some uses they are not exactly comparable, and they are not marketable at the same price. However, each of these species had, through custom, developed exclusive markets, relatively speaking, and markets in which they were directly competitive. This competition between species is a factor which very materially affected the realization of the mills. It was not possible, or at least it was not considered possible by the industry, that prices of sizes and grades of one species could be determined purely on the basis of the cost of that species. The competing species with its cost and related price also had to be considered. In this coordination between species it was found that very definitely determined minimum cost protection prices based on weighted average costs in the producing divisions must necessarily be adjusted either upward or downward so that one or the other should not be, by the establishment of such price eliminated from or eliminate the other from a market in which both had participated prior to the adoption of the Code.

Actually under the Code each division of the Lumber and Timber Products Industry presented certain data concerning mill realization. As previously stated not one of the actual lumber producing divisions presented conclusive material on this subject. Certain data on mill realization were presented by the Southern Pine Division but were based on studies of several years prior. Other divisions were in practically the same position and the statistics quoted as mill realization were in the majority of cases theoretical as they applied to the then current conditions.

Certain data as to reported costs and reported realization under the Code and during a Code period of January, February, and March, 1934, compared with the Tariff Commission costs of 1929, are presented in Table XXX. The data from the industry are found in an unpublished report of the Research and Planning Division, NRA. (*)

(*) Unpublished report of Research and Planning Division, NRA, "Cost Protection Prices and Cost Substantiation Data, "May 6, 1935.

and the information from the Tariff Commission (*) has been discussed previously.

The information is supplied only as to certain of the divisions under the Lumber Code Authority which produced a very large percentage of all lumber. The Southern Pine Division submitted cost reports from 136 large mills and 181 small mills. The large mills produced 410,705,000 ft. b. m., which quantity was reported to be about 76 per cent of the production of all large mills. The cost reports from the 181 small mills covered 56,705,000 ft. b. m. It was also estimated by the Southern Pine Division that 50 per cent of the production of Southern pine came from the small mills in that division. It will be noted that the cost of production and the reported realization was approximately $4 per thousand less for the small mills than was reported by the large mills although it may be noted that the products are different. The U. S. Tariff Commission costs of 1929 did not distinguish between small mill and large mill costs. There is one other point to be considered in this comparison, namely, the costs developed by the industry included selling costs and interest as paid or accrued while the costs developed by the Tariff Commission did not include any selling cost but did include interest at six per cent on the depreciated value of fixed assets (including standing timber and land) and the average value of inventories as shown by the books of the companies investigated.

The costs for hardwood were not developed by the U. S. Tariff Commission. Under the Code costs were developed for the two principal hardwood groups, the Appalachian Hardwood and the Southern Hardwood Subdivisions. Originally, under the Code these two groups were combined, but later under a Code amendment separate sub-divisions were set up. These sub-divisions were outlined generally on the basis of the forest range of the specific woods and not upon state lines. The costs and realization as submitted by the Southern Hardwood and Appalachian Hardwood Subdivisions were subject to certain adjustments peculiar to these two groups. An item very definitely set forth in amount as a reduction of the realization was for degrade and shrinkage, and no conclusive supporting data was submitted for this item. In the Southern Hardwood Subdivision realization figure as presented on Table XXX, $4.53 is included for degrade and shrinkage. For the Appalachian Hardwood Subdivision the amount of this item is stated as $4.35 per thousand.

In connection with the realization item for Western Pine lumber it should be stated that the quoted amount was produced by applying the formula based on the average outturn of the log as submitted by the Western Pine Division. There was no definite data as to what the sawmills actually did receive for actual lumber produced for the costs detailed by them.

The West Coast Division submitted information as to costs of production and realization for both large and small mills producing Douglas fir and hemlock, and the same data for Sitka spruce. It will be noted that as between the large mills and the small mills producing Douglas fir and hemlock, the costs of the small mills were approximately only two-thirds of the costs of the large mills. It will also be noted that the reported realization of the small mills was $2.35 per thousand

in excess of the cost but that the realization of the large mills was 60 cents per thousand less than the cost to produce.

The U. S. Tariff Commission, in developing their costs of production of Douglas fir and hemlock for 1929, presents a composite total cost of $23.96 per M ft. b. m. This cost, as well as the cost of $23.07 for Western pine, is subject to the same qualifications expressed above in connection with the cost of $28.25 per M for Southern pine lumber.

F. LABOR

1. Statistical Coverage

As mentioned in Chapter 1, the Census classification "Lumber and Timber Products" is much more restricted than the industry covered by the Code, the former being defined as including: "logging camps; merchant sawmills; combined sawmills and planing mills, including those engaged in the manufacture of boxes; veneer mills; and cooperage stock mills."

The Census classification "Planing Mill Products" embraces "independent" planing mills; that is, planing mills not operated in conjunction with sawmills.

The Census term "Wooden Boxes" includes establishments engaged primarily in the manufacture of wooden boxes (not including cigar boxes); crates for butter, fruits, berries, and vegetables; box shooks; cases for eggs and canned goods; carrier trays; etc.

These three Census classifications, "Lumber and Timber Products", "Planing Mill Products", and "Wooden Boxes, except cigar boxes", do not conform, even in their combined scope, with the coverage of the codal definition of the industry, but together they represent the nearest approximation to that scope for which statistics are available. In this connection it should be borne in mind that the Census statistics are, in general, restricted to establishments reporting products valued at $5,000 or more annually. This applies to the data for 1933, but for earlier years a mill which sawed 200,000 feet of lumber, 1,000,000 laths, or 2,500 squares of shingles was treated as an establishment with products valued at $5,000.

2. Number and Type of Employees

a. Number of Employees.

The aggregate employment in the three Census classifications of the industry just described amounted to 539,772 wage earners in 1929. Of this number over 77 per cent was represented by the Census classification "Lumber and Timber Products", which, in general, covers logging, sawmills, combined sawmills and planing mills, veneer and cooperage stock mills. Over 16 per cent of this employment was represented by planing mills not operated in conjunction with sawmills. The remainder, or less than 7 per cent, was engaged in the manufacture of wooden boxes and packages.

The logging and sawmill branch of the industry (Census classification "Lumber and Timber Products") ranked third in 1929 among all American industries with respect to the number of wage earners employed, being exceeded by only the Foundry and Machine Shop Products and the Cotton Goods Industries; and followed by the Iron and Steel (Steel Works and Rolling Mills) Industry. (*)

(*) Census of Manufacturers, Bureau of the Census (1929), Vol.II, p. 34

Approximately 162,000 wage earners, or 39 per cent of the 1929 logging and sawmill employment, were loggers, the remainder, or about 61 per cent, being engaged in the mills.

The following table shows the number of wage earners in the three Census classifications of the industry for the odd years 1925 to 1933 inclusive. Similar data for the even years are not available.

Number of Wage Earners (Census Classifications)

Year	Lumber and Timber Products	Index (1929=100)	Planing Mill Products	Index (1929=100)	Boxes Wooden Except Cigar Boxes	Total Wage Earners	Index (1929=100)
1925	467,090	111.5	111,329	123.5	34,834	613,253	113.6
1927	413,946	98.8	96,589	107.2	30,797	541,332	100.3
1929	419,084	100.0	90,134	100.0	30,554	539,772	100.0
1931	196,647	46.9	54,493	60.5	22,864	274,004	50.8
1933	189,367	45.2	35,388	39.3	21,753	246,508	45.7

Source: Census of Manufactures, Bureau of the Census - 1929 and 1933.

It will be seen from the foregoing table that the number of wage earners in the three Census classifications declined from 613,253 in 1925 to 539,772 in 1929. Under the influence of the business depression this employment fell sharply to 274,004 in 1931, a loss of approximately 50 per cent from the 1929 level. The year 1932 represented the bottom for the industry, both in production and employment, but actual employment figures for that year are not available. However, the index of employment for sawmills and millwork, prepared by the Bureau of Labor Statistics and shifted to a 1929 base, fell to 37.8 in 1932, as compared with 49.5 in 1931 and 44.3 in 1933. On the basis of the 1932 index it is computed that employment in that year fell to 204,034 wage earners. In 1933 the employment level was about 5 per cent below the 1931 level and represented 45.7 per cent of the 1929 employment.

Technological unemployment has been less in this industry than in most other industries. There have been notable improvements in manufacturing methods, but these have taken place gradually over the past quarter of a century, with no sudden displacement of labor. (*)

From Census statistics (**) it is computed that the average

(*) Verbal statement of Frank Read, former Assistant Deputy Administrator, N.R.A., on the Lumber and Timber Products Code, February 4, 1936.

(**) Census of Manufactures, Bureau of the Census, 1933.

reporting establishment in the sawmills, "Lumber and Timber Products", employed about 32 wage earners in 1929, 32 in 1931, and 50 in 1933; (*) the average "independent" planing mill (millwork) establishment employed between 18 and 19 wage earners in 1929, nearly 16 in 1931, and 15 in 1933, while the average wooden box or package establishment employed about 39 wage earners in 1929, 34 in 1931, and 37 in 1933. When it is realized that in some cases two or more mills operated under common ownership are counted as a single establishment and that, in general, the Census statistics do not cover mills whose products are valued at less than $5,000 annually, it is seen that the average working group of employees in the industry is quite small.

The following table shows the average number of wage earners in establishments of various sizes for the year 1929.

In Establishments with Products Valued at:	Average Number of Wage Earners in Sawmill Establishments a/	Average Number of Wage Earners in Millwork Establishments b/
$5,000 to $19,999	4.9	2.5
20,000 to 49,999	13.5	6.1
50,000 to 99,999	27.4	11.7
100,000 to 249,999	58.5	26.0
250,000 to 499,999	125.2	54.2
500,000 to 999,999	216.6	109.3
1,000,000 to 2,499,999	411.2	219.4
2,500,000 to 4,999,999	841.8	421.8
5,000,000 and over	2,179.7	none

Source: Computed from Census of Manufactures, 1929.

a/ Census classification "Lumber and Timber Products"

b/ Census classification "Planing Mills"

b. Seasonality of Employment

The extent of seasonal fluctuations in employment in the sawmill branch of the industry is shown by the following indices of employment:

(*) This increase was undoubtedly due to the decline in the number of small establishments.

Index of Employment (1929=100)
Sawmills

	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Jan.	104.7	98.6	90.8	94.6	95.3	51.6	36.8	34.8	49.7	50.0
Feb.	104.5	97.4	90.8	95.1	82.2	50.5	35.8	33.7	50.7	52.9
Mar.	104.9	96.9	93.4	96.6	82.9	50.1	35.5	33.1	52.8	54.2
Apr.	109.6	97.4	95.9	101.0	82.0	49.9	36.6	34.8	55.5	56.3
May	111.8	99.9	97.0	103.2	81.1	50.0	36.7	37.1	58.4	55.0
Jun.	112.7	100.4	99.2	105.1	78.4	49.6	37.1	43.1	56.8	50.0
Jul.	112.1	100.1	97.8	105.1	73.7	47.3	36.4	49.1	54.7	55.0
Aug.	112.6	101.0	100.3	106.3	70.0	46.3	36.6	53.7	54.9	
Sep.	110.2	101.5	101.1	103.9	66.4	45.1	37.8	57.2	55.2	
Oct.	108.4	99.9	100.8	100.3	64.9	44.0	39.2	58.4	54.9	
Nov.	106.6	98.1	100.3	97.0	61.1	42.4	38.6	56.1	53.1	
Dec.	104.2	94.0	97.5	91.8	56.8	38.7	37.0	53.9	51.1	
Aver-age:	108.5	98.8	97.1	100.0	73.7	47.1	37.0	45.4	54.0	

Source: Bureau of Labor Statistics Index, shifted to 1929 base.

Similar data for millwork (Census classification "planing Mills") are presented in the following table:

Index of Employment (1929=100)
Millwork

	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Jan.	124.9	110.6	99.0	100.0	82.9	62.9	49.0	33.6	37.7	40.7
Feb.	125.1	108.8	99.4	100.5	84.2	64.3	46.7	34.4	40.9	42.9
Mar.	126.3	108.0	99.9	103.4	81.7	64.4	45.6	31.7	42.6	43.4
Apr.	123.5	108.9	102.4	104.3	81.5	64.5	43.4	33.6	44.6	45.0
May	122.0	108.8	104.3	105.1	81.7	65.4	42.8	36.2	45.8	46.1
Jun.	121.7	109.3	105.1	105.1	79.3	63.2	41.0	39.8	42.9	47.5
Jul.	121.4	109.0	105.4	104.9	75.7	61.6	38.9	44.0	42.0	50.6
Aug.	121.4	109.0	106.5	104.5	73.3	60.8	38.6	45.2	41.0	
Sep.	119.9	106.9	104.5	101.2	68.9	56.8	38.5	45.3	39.2	
Oct.	119.4	104.7	101.6	96.3	69.6	54.8	38.0	43.9	41.1	
Nov.	117.7	102.2	102.5	89.9	68.1	54.3	37.5	42.2	41.1	
Dec.	113.6	100.7	99.2	84.8	67.3	52.8	36.5	41.1	41.6	
Aver-age:	121.4	107.3	102.5	100.0	76.2	60.5	41.4	39.3	41.7	

Source: Bureau of Labor Statistics Index, shifted to 1929 base.

C. Type of Employees

It was seen in Chapter I that, in general, employees in the industry may be divided into two principal groups, namely, logging employees and sawmill employees. Loggers, for the most part, must live in camps which can be moved readily from one logging center to another, for with modern methods it requires only a short time to fell all the commercial trees on a considerable area. There are, therefore, very few permanent

living quarters for loggers. Such workers are, for the most part, unmarried and are more or less transient in most of the producing regions. An exception to this situation exists in those logging areas which are fairly contiguous with agricultural areas, as in the South and Appalachian regions, where logging labor is frequently interchangeable with that of agricultural labor, with no clearcut division between them. In such cases loggers frequently have more or less permanent residences on farms in the vicinity and are engaged part of the year in logging operations.

Sawmill workers fall into the category of factory workers. They are less transient, particularly in the Western areas, than the loggers.

Planing mill workers may be engaged in operations adjacent to the sawmill, or they may be employed in independent planing operations located near the centers of demand and far from the logging and sawmill operations. Whichever is the case will determine whether the workers will have the advantage of the lower living costs of the country or must incur the higher urban costs.

Questionnaire data compiled by the Southern Pine Association, November 18, 1935, covering 85 large sawmills in 10 states in the Southern Pine area, gave the following percentages of negro to total labor employed in the month of September: 1932, 52.3; 1933, 50.1; 1934, 52.2; and 1935, 50.9. Similar data for small mills would probably show a larger percentage of negroes due to a lesser degree of mechanization and therefore of required skill. Data compiled by the Southern Pine Association in connection with the above-mentioned study and covering 18 small sawmills in seven Southern Pine states, showed the following percentages of negro to total labor for the month of September: 1932, 55.3; 1933, 55.3; 1934, 55.5; 1935, 59.2.

The logging and sawmill workmen of the North and West are generally of a roving, independent nature, while those in the South are inclined to spend their lives in the same locality, changing from lumbering to agriculture and back again according to demand.

With reference to the sex of employees, a study made by the Bureau of Labor Statistics in 1929, covering 58,007 employees of 319 representative sawmills in 22 states and 6,968 employees of 51 logging camps in 10 states, revealed the fact that only 18 of the sawmill employees and only 29 of those in the logging camps were females. (*)

In 1930 there were 20,761 persons under 18 years of age employed as lumbermen, raftsmen, woodchoppers, and in saw and planing mills, 4,228 of these being between the ages of 10 and 15 and the balance, or 16,533, being 16 and 17 years of age. These statistics are set forth in detail in the following table:

(*) Bulletin No. 497, Bureau of Labor Statistics, page 1.

Children 10 to 17 years, inclusive, of age gainfully occupied as lumbermen, raftsmen, and woodchoppers and in saw and planing mills in 1930

Occupations	Total	10-15 yrs., incl.	16-17 yrs., incl.
Total	20,761	4,228	16,533
Lumbermen, raftsmen and woodchoppers:	5,025	1,047	3,978
Teamsters and handlers	297	57	240
Other lumbermen, raftsmen and woodchoppers	4,728	990	3,738
Saw and Planing Mills a/	15,736	3,181	12,555

Source: Prepared by the Children's Bureau, Department of Labor, from Census of Population, 1930, Volume V.

a/ Includes Wooden Box factories.

During the period 1932 to 1935, inclusive, skilled labor in 103 sawmills in 11 states in the Southern Pine area averaged about 37 per cent of the total workmen on the payrolls of these mills, and common labor 63 per cent. (*) Similar statistics for the Northern and Western portions of the industry are not available, but in view of the greater degree of mechanization of those areas and the corresponding greater degree of skill required, the proportion of skilled workmen in such areas is doubtless larger.

Some idea of the range of occupations in sawmills may be gained from the following list of the principal occupations published by the U. S. Bureau of Labor Statistics in connection with its hour and wage data: (*)

> Pondmen, log yardmen, head band sawyers, head circular sawyers, doggers, setters, saw tailers on head saws, gang sawyers, resaw sawyers, small saw sawyers, edgemen, edger tailers, transfermen, trimmer loaders, trimmer operators, gang or resaw offbearers, graders, sorters, hand truckers, power truckers, hand stackers, planing mill machine feeders, tallymen, millwrights, laborers, and other employees.

In logging the types and nomenclature of occupations differ considerably in different parts of the country, and even between states in the same general area. This difference is especially noticeable in

(*) Analysis of questionnaire data by the Southern Pine Association, New Orleans, Louisiana, November 18, 1935.

(*) U. S. Bureau of Labor Statistics, Wages and Hours of Labor in the Lumber Industry in the United States; 1932, Bulletin No. 586

comparing the Northwest and the South, due largely to the larger and taller lumber in the former area and the greater degree of mechanization in that area.

The principal occupations in the logging camps of North Carolina, listed by the U. S. Bureau of Labor Statistics, are as follows:

Blacksmiths, skidder cable pullers, clean-up men, cooks, cutters, fallers, filers, skidder firemen, foremen, assistant foremen, felling crew foremen, section foremen, teamster foremen, truck foremen, grab-jack men, hookers, laborers, labor leaders, laborers and hookers, loader levermen, skidder levermen, loadermen, log stowers, riggers, roadmen, ropers, sawyers, skidder yard sawyers, stumping tree sawyers, section hands, spikers, swampers, teamsters, tong hookers, top loaders, tractor operators, and wood cutters.

By way of contrast, the following list of principal occupations in the logging camps of Oregon, published by the same source, is of interest:

Bakers, bedmakers, blacksmiths, buckers, head buckers, bull cooks, log bunchers, caterpillar drivers, caterpillar greasers, chasers, choker setters, climbers, cooks, crane operators, cruisers, dishwashers, donkey engineers, loader engineers, fallers, filers, firemen, donkey firemen, loader firemen, fire wardens, flunkies, head flunkies, handymen, high climbers, hookers, hook tenders, knotters, laborers, linemen, loaders, head loaders, second loaders, machinists, machinists' helpers, mechanics, pumpmen, camp repairmen, car repairmen, head car repairmen, caterpillar repairmen, donkey engine repairmen, camp repairmen's helpers, caterpillar repairmen's helpers, riggers, head riggers, riggers' helpers, sawyers, scalers, swampers, teamsters, tong setters, watchmen, welders, whistle punks, and wood bucks.

3. General Labor Conditions

a. Hazards of Employment

Records of the National Safety Council indicate that the lumbering industry ranks among the most hazardous of industries. (*) The report of the Council for 1933 shows lumbering as twenty-ninth in frequency and twenty-seventh in severity of accidents among thirty major industrial classifications. (*)

The accident frequency and severity rates for 1930 given in the above-mentioned report are as follows:

(*) Children's Bureau, Department of Labor, memorandum of January 17, 1936, prepared for the Lumber and Timber Products Study Unit.

(*) Accidental Injury Rates in the Woodworking and Lumbering Industries, 1933 - National Safety Council.

	Frequency Rate	Severity Rate
All Industries	14.56	1.59
Woodworking	18.26	1.56
Lumbering	59.67	5.00

The need for exclusion of minors from industries as hazardous as this industry has for many years been recognized. In 1932 the Advisory Committee on the Employment of Minors in Hazardous Occupations, a technical committee of health, industrial, and insurance experts, after a study of dangerous occupations and accident experience, included in its reports a recommendation that minors under 18 should be prohibited from employment in lumber and logging operations, in saw and planing mills, on the operation of power-driven woodworking machinery, and in the loading, unloading, piling or storing of heavy lumber. (*)

In a study made by the U. S. Children's Bureau (**) some years ago covering accidents in a single year to minors under 20 years of age in Wisconsin, the Lumber and Furniture industries were found as a group even more dangerous to these young workers than the Iron and Steel industries, causing 137 injuries per 1,000 boys in semi-skilled occupations, and 35 per 1,000 laborers. Boys in semi-skilled work in saw and planing mills had an injury rate of 153 per 1,000 and in other woodworking industries (excluding furniture) a rate of 204 per 1,000. For the laborers in these saw and planning mills the rates were lower, being 47 and 28, respectively.

In a later study of accidents to illegally employed minors in this same state (Wisconsin), made also by the U. S. Children's Bureau (***), woodworking machines ranked first among machines causing accidents. Three-fourths of these accidents occurred in the manufacture of lumber and allied products, saws and planers being responsible for a very large proportion of the woodworking accidents. Those injured by woodworking machines included a large proportion permanently disabled.

In spite of the recognized hazards in the industry, boys 16 and 17 years of age, as indicated by the Bureau of the Census figures previously given, were still permitted to work up to the time the Lumber and Timber Products Code was approved, and the prohibition in that Code against the employment of those under 18, with a few specified exceptions, represented a real advance in protecting minor workers from industrial injuries. (****)

(*) Statement of the U. S. Children's Bureau, Department of Labor, January 17, 1936, prepared for the Lumber and Timber Products Study Unit.

(**) U. S. Children's Bureau, Industrial Accidents to Employed Minors in Wisconsin, Massachusetts, and New Jersey, Publication 152, p. 20

(***) The Illegally Employed Minor and the Compensation Act, Publication 214, Table 11, p. 108.

(****) Statement of the U. S. Children's Bureau, Department of Labor, January 17, 1936, prepared for the Lumber and Timber Products Study Unit.

b. General Labor Conditions on the West Coast

1. High Labor Turnover

One of the signs of a contented labor force is a low labor turnover. If men are happy and contented with their work they will usually stay with it; if they are restless and discontented they will move on to another job. In the West Coast Lumber Industry the labor turnover has usually been very high, although like so many other aspects of the situation, adequate figures on the subject are difficult to find. A few mills, however, have made careful turnover studies. Four Oregon mills report that during the three years 1919, 1920, and 1921 the average number of separations was 703 per mill per year, while the average working force per mill was 343, indicating a turnover of about 205 per cent. (*) Five Washington mills during the same period had an average yearly turnover of 266 per cent, (**) and there probably was little labor trouble in these mills during this period. Had figures been available for the years 1917 and 1918 they would undoubtedly show a much larger rate of turnover, particularly for the six months preceding the shortening of the work day. It is generally admitted that the turnover during the period ran from 500 to 1,000 percent per annum(***) In 1915 the Federal Industrial Relations Commission estimated that the annual turnover in the logging camps was about 500 per cent. (****)

The causes of this turnover have been many and have ramified through all the relations of workers and owners in the industry. Some turnover is inevitable in any industry, due to sickness, accident, death, old age, promotions, removals, etc. Some of the turnover is peculiar to this industry but inevitable in it. Men find it too exacting to continue working indefinitely in some of the extreme weather of the West Coast Region and leave it to rest up or dry out. (*****) Rain, even when it reaches a precipitation of four or five inches per day, does not hinder operations in mill or camp until something washes away. High wind, however, may stop logging, and snow sometimes interferes with it, especially well up in the mountains. There is also a considerable amount of idle time due to breakdowns or necessary repairs. All of these causes result in increased labor turnover.

(*) Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923. Bureau of Labor Statistics.

(**) Four L Bulletin, April, 1922, p. 35.

(***) Bureau of Labor Statistics, Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923, p. 38.

(****) U. S. Commission on Industrial Relations: Final Report, p. 167

(*****) Bureau of Labor Statistics, Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923.

2. Causes of Labor Unrest.

Sporadic strikes and union activity in the logging and lumber camps of the Northwest from 1905 to 1923 (discussed later in this chapter) threw a penetrating searchlight on the bad conditions existing in such camps. Professor William F. Ogburn of the University of Washington wrote, in 1918, (*) that the chief causes of labor unrest in the industry were: (1) long hours; (2) low wages; (3) unsanitary camps; (4) lack of family life; (5) absence of community life; (6) unsatisfactory working relationships with foremen; and he stated that these were of importance nearly in the reverse order to that in which they are mentioned. These causes will be discussed in turn. Hours of labor and wages will be treated in greater detail later in the chapter. The space given to this discussion is believed warranted by the fact that the greatest amount of labor unrest has been on the West Coast, and also by the fact that the States of Oregon and Washington, on the basis of the 1931 census, accounted for one-fourth of the total wage earners in the "Lumber and Timber Products" (Census classification) branch of the industry, and in 1933 these states accounted for a slightly larger share of the industry's wage earners.

Ten hours was the standard working day in the Lumber Industry almost from its inception, although in some operations longer or shorter days were worked. While there had been dissatisfaction with the 10-hour day for many years, it did not assume important proportions until 1917. The great strike of that summer was chiefly for the 8-hour day, and it was not until the day was shortened to 8 hours on March 1, 1918 that it was possible to quiet the unrest at that time. (**) Since the 8-hour day first went into effect there have been few deviations from that norm on the West Coast. In April, 1922, a survey of the camps and mills on the West Coast showed that of 749 operations only 15 were running over 8 hours. (***)

Wage rates have created labor unrest chiefly when wages have been decreased or when prices have risen, or on account of the wage spread between adjoining camps. Each of these conditions has been frequent enough to cause considerable dissatisfaction. In February, 1923, in the Centralia and Grays Harbor districts on the West Coast, about 50 miles apart, the wage spread for laborers was $1.25 per day. While this spread was probably above the average, there has usually been considerable variation in wages from plant to plant. (****)

(*) University of Washington Forest Club Annual, 1918, pp. 11-14, Causes and Remedies of the Labor Unrest in the Lumber Industry, by Wm. F. Ogburn.

(**) Bureau of Labor Statistics; Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923.

(***) Four L Bulletin, May, 1922, p. 12. (Pacific Northwest)

(****) Four L Bulletin, March, 1923, p. 13.

Practically none of the camps on the West Coast is so arranged that the men can live at home and for most of them there is no alternative to living in the camp bunk house and eating at the camp cook house. The bad living conditions in the bunk houses furnished for loggers in the Pacific Northwest prior to 1917 are indicated in a mass of testimony on the subject given before the Industrial Relations Commission.

Professor Ogburn reported that of the large number of camps he inspected in the Northwest during the winter of 1917-1918, one-half had wooden bunks, one-half had bed bugs, one-third had bad toilets, and only one-half had showers, while as a rule the camps had about one-half the requisite amount of air space and one-third the window area required. The men nearly all furnished their own bedding. (*) In most of these camps the food was fairly substantial and plentiful, as was necessary to enable the men to endure the long hours and hard work, but this was not always the case, and in some camps, especially in hard winters when men were plentiful, the food was insufficient in quantity and of poor quality. (**)

Some of the most careful students of labor unrest in the industry hold that the more fundamental causes lie below the surface even of the worker's thought, and that the chief of such causes have been the lack of family and community life in the camp and the unsatisfactory relations between workmen and foremen. (***) There was practically no provision for organized recreation at the camps except in the few places where the Y. M. C. A. has been established.

In most cases men have been chosen for positions as foremen on the basis of their knowledge of machinery or technique rather than on the basis of their ability to handle men. Accordingly, it has been common to find that the foreman had little understanding of, or any sympathy with, the feelings and prejudices of his men. (****) A particularly distasteful outgrowth of this situation has been what the workers call "highballing", which usually consists in crowding the workers to as rapid a pace as possible. This has been most common in connection with yarding in the logging camps, where the hook tender has speeded up the work by example, and by giving signals to the engineer to go ahead before the men were entirely ready. Such a practice has greatly increased the hazard of a business dangerous at best, and probably has increased the accident rate. (*****)

(*) University of Washington Forest Club Annual, 1918, pp. 11-14; Causes and Remedies of the Labor Unrest in the Lumber Industry, by Wm. F. Ogburn.

(**) J. Rowan, The I. W. W. in the Lumber Industry, pp. 9-10.

(***) Carleton H. Parker, The I. W. W., in "The Casual Laborer and other Essays", p. 103 (1920)

(****) Bureau of Labor Statistics; Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923.

(*****) Ibid.

3. Improvement in Labor Conditions

California was a pioneer in legislation designed to improve the conditions of the workers on the West Coast. The first labor camp sanitation law for the state was passed in 1913 and became effective on August 10 of that year. (*) Its enforcement was placed with the State Board of Health but no special funds were provided to carry on the work. This same legislation created the Commission of Immigration and Housing, which, among other powers, was given the right to inspect labor camps.

The 1913 law set forth, in general terms, that the bunk houses and other sleeping quarters and the grounds about the camps should be kept clean. It also provided, in general terms, that there should be sufficient air space in the sleeping quarters and that the beds or bunks should be made of sanitary material, so constructed as to afford reasonable comfort to the occupants. There were no requirements for toilets or bathing facilities, nor for the disposal of garbage or other refuse which made many of the camps unfit for human habitation. In 1915 this act was completely revised and contained in its provisions many of the features which had been established by rule and found to be practicable. The power to enforce this law was placed in the hands of a Commission of Immigration and Housing. (**)

The act has since been further amended until the present law, though not ideal, assures reasonable comfort to the occupants of these camps. To aid in the establishment of good camps the Commission publishes an advisory pamphlet on camp sanitation, giving all necessary information for their construction. This pamphlet has received international recognition. In addition, the Commission gives operators the benefit of the advice of its experts whenever called upon, and many logging and lumber camps have been built with their aid. (***)

The amended Act of 1913 prohibits the use of platform bunks and discourages the use of the double-deck bunk. It has eliminated the wooden bunks filled with loose straw, which generally became vermin infested. The screening of windows and other openings in the kitchen and dining quarters has improved kitchen and dining services. Such practices and the proper care of garbage have relieved the camps of many flies and improved living conditions of the workers. (****)

(*) Kearney, R. W., Chief, Division of Housing and Sanitation, Department of Industrial Relations, State of California, California Sets Standards for Labor Camps; National Safety Council, March, 1930.

(**) Ibid.

(***) Ibid.

(****) Ibid

The major lumber companies, with few exceptions, are reported to have cooperated fully, and some of them have gone beyond the requirements of the act in furnishing hotel service, including the making of beds with sheets, for which a reasonable charge is made. The operators of small mills have usually been harder to get in line. They frequently hire neighbors for some of the operations and contract other parts of the work. The wife of a worker operates the cookhouse, such as it is, and the housing is anything from a few cull boards thrown together, or tents, to automobiles converted into sleeping quarters. The small mill operator has frequently disclaimed responsibility for the condition of the grounds, unscreened cookhouses, unsanitary toilets, etc. (*)

While the foregoing refers only to the State of California, it is a matter of common knowledge that the improvement in living conditions of the workers in that state is reflected elsewhere in the West Coast area. While crowded bunkhouses, unsanitary conditions, lack of drying rooms, and absence of showers are still found in some of the camps, the most flagrant evils have been eliminated. (**)

c. General Labor Conditions in the South.

Similar detailed data for the South are not available, but it may be stated that the causes of labor unrest in the West Coast section, just discussed, do not, in general, apply to the South. This is due mainly to the fact, mentioned earlier in this chapter, that in the latter regions the logging areas are more or less contiguous with argicultural areas. Logging labor is largely, therefore, interchangeable with agricultural labor and loggers often have more or less permanent residences on farms in the vicinity, working only part of the year in logging operations. For this reason the lack of family and community life, which has been such a fertile source of labor troubles on the West Coast, has not, in general, applied to the South. On the other hand, however, the South is confronted with the problem incident to the large numbers of negroes employed in the same camps and mills as the whites and often competing for the same jobs. The negro workers are more or less resigned to their station, seek whatever security they can gain from a low wage scale, from the uncomplaining performance of disagreeable tasks, and from occasional benevolent sentiments of the more influential elements of the white population. There is evidence, also, of poor housing conditions in some of the logging and lumber camps, especially in those of the smaller companies.

The comparatively low wages paid in the South have been rendered somewhat less of a hardship due to the milder climate and the fact that many of the workers have permanent homes or farms where they

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(*) Ibid.

(**) Todes, Charlotte, Labor and Lumber, International Publishers, New York (1931)

can supply part of their food requirements and while on the job are frequently furnished with company-owned cottages at low rentals.

A survey made by the Southern Pine Association, covering 103 mills in the Southern Pine area, revealed the fact that of 6,045 houses owned by these mills, 552, or 9 per cent, were occupied rent free in the first quarter of 1934, 216 by white tenants and 336 by negro tenants. (*)

The same survey indicated that of 11,813 laborers employed by 127 companies in February, 1934, 64 per cent were housed in company-owned buildings. The average rents of these company-owned houses, according to this survey, ranged from 50 to 60 cents per week for two-room cottages, to $4.75 a week for certain six and seven-room cottages.

4. Organizations and Disputes

Labor organization activity in the industry has been largely confined to the West Coast, although there has been some such activity in the Southern States of Louisiana, Arkansas and Texas, and in the West Virginia Hardwood field. Organization in the latter area did not begin until the end of the Codal period (May, 1935). These areas will be discussed separately.

a. West Coast.

The first union activity on the West Coast occured among the workers in the shingle mills, commonly called "shingle weavers", about 1890. These workers were never very numerous, the group in any mill being small. They were very mobile, the range of skill required was small, and most of the work could be done by any one of the group. In addition, the method of wage payment --by the piece--and the dependence of all the crew upon the pace set by the shingle sawyers, drew them together. This group was well fitted, therefore, to take the lead in union activity. (**)

About 1890 this group formed the West Coast Shingle Weavers' union, with six locals in the State of Washington. In January, 1903, the various shingle weavers' locals united to form the International Shingle Weavers' Union of America. This union was involved in many strikes during the first few years of its existence, most of these being of minor importance. The more important were the general strike of 1906 at Ballard and the Gray's Harbor strike in 1911-1912, all of which were located in the State of Washington.

(*) Brief in behalf of Southern Pine Industry submitted to the National Industrial Recovery Board by P. A. Bloomer, February 2, 1935.

(**) Bureau of Labor Statistics; Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923.

The general strike of 1906 began at Ballard on April 1 when the union there went on strike, ostensibly to obtain the union scale of wages which was being paid elsewhere. Since this meant only a small increase, it was generally understood that the strike was for recognition of the union. This the owners refused. The strikers were supported by the International Union, while the mills were aided by those in other parts of the state. On July 27 the International Union called out all of its members on the West Coast, tying up about 60 per cent of the shingle production. About two weeks later the union called the strike off and the men went back to work wherever they could obtain jobs, the union being almost destroyed. (*)

The Grays Harbor strike in 1911-1912 was the next one of importance. An organization campaign had been started at Grays Harbor, but on October 10, 1911, before the completion of the campaign, two plants discharged their union employees, whereupon the union called a strike at both plants. Soon two other plants joined in the lockout. Considerable bitterness was aroused, especially in Hoquiam, where some disorder occured, and the strike dragged out until it merged into the I. W. W. strike of March 14, 1912. Most of the original demands of the shingle weavers were granted with the settlement of the I. W. W. strike. (**) It should be mentioned here that frequent attempts were made to withdraw the Shingle Weavers' Union from the American Federation of Labor and affiliate it with the I. W. W., but that these efforts were all unsuccessful. (***)

Many attempts were made before 1913 to organize the logging and sawmill workers on the West Coast, but few are worthy of mention. (****) In 1905 the International Brotherhood of Woodmen and Sawmill Workers were granted a charter by the American Federation of Labor and by 1906 this union had attained its greatest strength, with less than 1,250 members. The members had fallen to half that number by 1911 and the union was suspended by the Federation of Labor for failure to pay the per capita tax. (*****) After this suspension the

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(*) Washington State Bureau of Labor, Biennial Report, 1905-1906, pp. 194-196; Pacific Lumber Trade Journal, June, 1906, p. 9; July, 1906, p. 9, 33; August, 1906, p. 10; September, 1906, p. 9: Shingle Weavers News, February 8, 1913, p. 1

(**) Aberdeen World, Oct. 25, 1911, p. 4; Oct. 27, pp. 1,4; Shingle Weaver, Oct. 28, 1911, p. 1; Nov. 18, p. 1; Dec. 16, p. 1, Jan. 27, 1912 p. 2, et. seq; March 9, 1912, p. 1.

(***) Industrial Worker, January 23, 1913, p. 1; The Everett Massacre, by Walker C. Smith, Chicago, 1917, p. 29; Shingle Weaver, Feb. 1, 1913, p. 10.

(****) The Timberman, June, 1901, p. 5; July, 1903, p. 16.

(*****) American Federation of Labor; Proceedings of the Fortieth Annual Convention, 1920, p.33 et. seq.; 1911, p. 87.

American Federation of Labor extended the jurisdiction of the Shingle Weavers' Union to cover the entire Lumber Industry. (*) The name of the union was changed to "International Union of Shingle Weavers, Sawmill Workers and Woodsmen" and the name of its journal to the "Timber Worker". (**) About March, 1913, the union again changed its name to "International Union of Timber Workers". (***)

In January, 1914, a convention of the union voted to demand an 8-hour day in the Lumber Industry at the same hourly rate as for the 10-hour day, except that the minimum daily wage was set at $2.25, with time and a half for overtime. (****) The employers, however, opposed the demands and launched an aggressive attack on the union. A strike which developed proved unsuccessful. During 1915 this union fought 55 lockouts, lost in nearly every case, and was almost completely destroyed. (*****)

Immediately following these disastrous strikes and the failure of the Timber Workers Union to organize the Lumber Industry, the American Federation of Labor revoked the jurisdiction of the union over the sawmill and camp workers, thus limiting it again to the shingle weavers. (******) The shingle weavers' union was thereupon reorganized under its former name, "International Shingle Weavers' Union of America".

Logging and sawmill workers began to form locals after they had been excluded from the jurisdiction of the International Timber Workers' Union. Finally these locals merged into a new International Union of Timber Workers, which did not include the shingle weavers, and in 1917 were granted a charter by the American Federation of Labor. (*******)

At this point it is appropriate to consider the International Workers of the World and their part in the labor organization and disputes on the West Coast. To this end it is well to recall the analysis of labor types made earlier in this chapter. Members of the I.W.W.

(*) Shingle Weaver, January 27, 1912, p. 10.

(**) Shingle Weaver, February 1, 1913, p. 2; February 22, 1914, p. 2.

(***) Timber Worker, March 31, 1914, p. 3.

(****) Timber Worker, January 31, 1914, p. 12. Proceedings of Twelfth Annual Convention, Resolution No. 104.

(*****) American Federation of Labor. Proceedings of Thirty-fifth Annual Convention, 1915, p. 38.

(******) Shingle Weaver, April 4, 1916; Seattle Union Record, February 12, 1916, p. 4.

(*******) Washington State Federation of Labor, Proceedings of Sixteenth Annual Convention, 1917, p. 156; American Federation of Labor, Proceedings of Fortieth Annual Convention, 1920, p. 35; Shingle Weaver, January 20 and 27, 1917.

have been recruited almost exclusively from the migratory groups, who have had an important part in shaping the policies and tactics of this frankly revolutionary organization. (*)

Among the principles of the I.W.W. are the following: (1) That the interests of the employer and the employees have nothing in common; (2) that the wage system must be replaced by an industrial society managed by the workers themselves; (3) that labor organizations must be based on industrial rather than craft lines. (**)

This social philosophy was not popular with the employers and it was not always clear whether their resistance to I.W.W. demands was due to this philosophy, its labor demands, or both. With reference to the demand for industrial, rather than craft, unions, it should be noted that the Lumber Industry, particularly the logging branch, does not readily lend itself to organization along craft lines. The logging camp employs a large number of unskilled and semi-skilled workers and only a few highly skilled men of many different crafts. These include engineers, machinists, carpenters, blacksmiths and many other crafts, but there are usually not more than two or three men of any one craft in a given camp or plant. In the camps most of the men live together in the bunk houses and when not at work are very closely associated. The contact in the mills is not so close, but the workers become well acquainted. These factors have militated against the craft union and favored the industrial type. (***)

The organization and initial propaganda of the I.W.W. on the West Coast takes us back to 1905, when a number of locals were formed, but its most important lumber strike did not start until March, 1912, when members of a sawmill crew at Hoquiam, Washington, walked out and closed the mill. No demands were made at the time, but it was generally understood that the strike was for better wages. The mill was paying $2 for a 10-hour day. Within the month the strike had spread, many mills had closed, and some violence had resulted. A citizens' committee at Grays Harbor finally proposed that the strike be settled on the basis of a minimum wage of $2.25 per day; that preference should be given to American labor; that no members of the I.W.W. should be employed; and that an otherwise open shop should be maintained. The mills accepted these proposals and although the strikers apparently did not formally accept the proposals or call off the strike, all mills were running with full crews about a month after the initial strike. (****)

The years following 1912 were very unfavorable for the I.W.W., with declining membership and strength, and it was several years before this

(*) Bureau of Labor Statistics; Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923.

(**) Ibid.

(***) Ibid.

(****) Aberdeen World, Apr. 3, 1912, pp. 1, 6; Apr. 5, 1912, pp. 1, 8; Apr. 8, 1912, p. 1; Apr. 17, 1912, p. 1

loss was recovered. Attempts to locate and remedy the faults in the organization led to the adoption of the "camp delegate system", whereby a camp delegate was placed on each job, his duty being to receive dues, hold meetings, look after the general interests of the men on the job and keep in touch with the nearest local. (*) This change in organization was accompanied by a considerable change in the attitude toward the job. The I.W.W. found that its own strength depended upon binding the members to their jobs -- a discovery which tended to break down the propaganda for sabotage which was so evident in the files of its papers from 1912 to 1917. (**) In the meantime, however, (1916) the I.W.W. had become involved in trouble at Everett, State of Washington, growing out of the shingle weavers strike there. A free speech fight was conducted which culminated in bloodshed on both sides. (***)

The strike in the Lumber Industry in the Northwest during the summer of 1917 will be given special attention not only because it represents by far the most extensive labor disturbance in the history of the industry, but also because of its important influence on future industrial problems. Extending to most of the West Coast, this strike brought to a head influences which had been gathering strength for years, and its settlement deeply affected subsequent industrial relations. Both the I.W.W. and the American Federation of Labor felt that with the improved lumber market in the early part of 1917 the time had come for a determined stand for improved labor conditions. Demands drawn up at an I.W.W. convention may be summarized as follows: Better living conditions in the camps, an 8-hour day, better wages, and union recognition. (****)

The strike began in April, 1917, and spread until, it is estimated, nearly 70,000 men throughout the Northwest were idle. (*****) As the strike developed all of the demands except that for an 8-hour day dropped into the background and the struggle centered on that question. The Federal Government was brought into the trouble through interference with the supply of lumber for the Army, and the Secretary of War and the Governor of Washington urged the employers to grant the 8-hour day, with time and a half for overtime. The employers refused to yield, however, claiming that the 8-hour day was economically impossible owing to the keen competition of other lumber regions where camps and

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(*) Industrial Worker, Feb. 1, 1912, p. 3; Solidarity (I.W.W. Organ) Jan. 3, 1914, p. 3; Nov. 21, 1914, p. 2 et seq; Nov. 28, 1914, p. 2.

(**) Bureau of Labor Statistics; Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923.

(***)Coleman, M. F., The I.W.W. and the Law; Everett; Sunset Magazine, July, 1917, pp. 35, 68-70; Smith, Walker C., The Everett Massacre.

(****)West Coast Lumberman, April 1, 1917, p. 42.

(*****)Bureau of Labor Statistics; Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923.

mills were on a 10-hour basis. (*) With the resumption of operations on the part of the mills in September, 1917, the Shingle Weavers' and Timber Workers' Unions dropped out of sight, and the remaining trouble was furnished by the I.W.W.'s strike on the job, or as then termed, "conscious withdrawal of efficiency". (**)

At this point a representative of the U. S. War Department held a conference of the leading employers of the West Coast, out of which grew the Loyal Legion of Loggers and Lumbermen, an organization of employers and employees with the purpose of cooperating with the Government for a maximum output of lumber and suppression of seditious activity. Commissioned officers were detailed to visit the lumber camps and enroll the men in the Loyal Legion. The organization was at once a success and installed a complete system of collective dealing between employer and employee. (***)

There were numerous employers on the West Coast who believed that it was necessary to grant the 8-hour day to quiet the unrest, but a majority of them were convinced that this was an economic impossibility as long as other lumber regions with which they were competing had a longer day. A meeting of employers held in Portland on February 27, 1918 attempted to reach an agreement on this question, but without success. It was finally agreed, therefore, to leave the settlement of the matter to a representative of the War Department, Colonel Brice P. Disque, who announced that on March 1, 1918 the Lumber Industry in the Northwest would go on an 8-hour basis. Immediately thereafter this action was unanimously approved by the 4-L organization. Employers also accepted the conference method provided by the 4-L machinery, but continued to oppose the closed shop. (****) The 4-L became the dominant organization for employer-employee negotiations, although after the war its membership shrank from 135,000 in 1918 to 10,000 in 1922. (*****)

A few local unions of sawmill workers and loggers remained, but the International Union of Timber Workers, affiliated with the American Federation of Labor, disbanded in 1923. The old I.W.W. organization, which had been active before the war, also declined into obscurity.

(*) Washington State Bureau of Labor, Biennial Report, 1917-1918, p. 67 et seq.; West Coast Lumberman, August 15, 1917, p. 19; U. S. Congress, House of Representatives, Select Committee on Expenditures of the War Department, Subcommittee on Aviation Testimony, Vol. 2, pp. 1182-1192 (66th Congress, 2d Session).

(**) Bureau of Labor Statistics; Industrial Relations in the West Coast Lumber Industry, Bulletin No. 349, December, 1923.

(***) Perlman and Taft, Histroy of Labor in the U. S. 1896-1932, The MacMillan Co. (1935).

(****) Ibid.

(*****) Ibid. Monthly Labor Review, Sept. 1935, U. S. Bureau of Labor Statistics.

During the depression the Loyal Legion suffered loss in membership and influence in common with regular and company unions, some companies and their workers withdrawing altogether, while others maintained an indifferent attachment. (*)

With the passage of the National Industrial Recovery Act in 1933 the 4-L's claimed collective bargaining control, but the American Federation of Labor became very active in an organization program and is reported to have partially controlled 90 per cent of the workers by August 1, 1935. (**)

A. F. of L. federal locals of loggers, sawmill, plymill and shingle workers sprang up throughout Washington and Oregon. On April 1, 1935 these federal locals organized the Sawmill and Timber Workers' Union and became a part of the United Brotherhood of Carpenters and Joiners of America.(***)

Discontent with low earnings and reduced employment had been growing among all lumber workers due in part to the fact that while the Code had increased their hourly wages, their hours had been so limited that there was no increase in weekly earnings. (****)

The new Sawmill and Timber Workers' Union voted to go on strike on May 6, 1935 if at that time they had not been successful in negotiations with the various lumber operators. Their proposed agreement providing for a 30-hour week, 75 cents an hour minimum wage, and union recognition was either ignored or rejected by all operators, who made no counter proposal. The strike was called and by the first of June had reached its peak, with practically all camps and mills tied up, involving 32,000 lumber workers. Shipping and other affiliated industries were seriously affected. (*****)

The 4-L agreed upon a scale of wage increases amounting to 5 cents on the minimum rates from 45 to 50 cents, 6 cents on wages from 55 to 62-1/2 cents, and 7 cents on rates from 65 to 72-1/2 cents.

The partial success of the 4-L, together with the Supreme Court decision on the NRA on May 27, 1935, influenced many members of the union to moderate their demands. An interesting side-light on the situation is afforded by the following excerpt from the 4-L Lumber News of June 16: "The production of the mills and camps now closed is not needed in the present condition of the national and foreign lumber markets .... The mills now down could remain closed for the rest of the year without affecting particularly the national lumber market, except to bring more prosperity to the South and other regions. (******)

(*) U. S. Bureau of Labor Statistics, Monthly Labor Review, Sept., 1935.

(**) Department of Labor, Files of the Division of Conciliation.

(***)U.S. Bureau of Labor Statistics, Monthly Labor Review, Sept., 1935.

(****)U. S. Department of Labor, Files of the Division of Conciliation.

(*****)U. S. Bureau of Labor Statistics, Monthly Labor Review, Sept. 1935.

(******)Ibid.

Toward the last of June the Federal Lumber Mediation Board, appointed by the Secretary of Labor, began negotiations between the union and individual companies. A little later a number of companies began operations on a 50-cent minimum rate and 40-hour basis but without written agreements, while some companies signed a union agreement providing for this wage scale and union recognition. By the middle of August practically all mills had reopened on the basis of individual agreements, some written and some verbal, but all granting increases in wages and limited recognition of the union. In general this recognition consisted of no discrimination against union men but refusal to run a closed shop. (*)

Opinions on the results of the strike vary. The 4-L was very emphatic in denouncing it as unnecessary, claiming that wage increases had been obtained through peaceful negotiation. Union officials, however, maintained that the best possible settlements had been made and that trade unionism, for the first time since the war, was again a dominant factor in the Northwest Lumber Industry. (**)

b. South

During 1910 an attempt was made to organize the timber workers in Louisiana, Arkansas and Texas into the Brotherhood of Timber Workers, an independent organization inspired by followers of the I.W.W. In 1912 the Brotherhood was formally affiliated with the I.W.W. Its headquarters were in Alexandria, Louisiana. (***)

In July, 1911, a convention of the compactly organized Sawmill Operators' Association in this region ordered the shut-down of mills with 3,000 employees and gave its executive committee power over the closing of the 300 mills in Texas, Louisiana and Arkansas. A war on the Brotherhood of Timber Workers and the I.W.W. was on, but the organizing campaign made considerable headway. The chief obstacle was friction between whites and colored, which the workers claimed was encouraged by the employers. The union leaders took the position that since the employers obviously had not objected to the mixing of races on the job, the union had excellent precedent for inviting whites and colored to a joint consideration of their common job interest.

The Brotherhood mapped out the following series of demands to be presented gradually to the lumber companies: A minimum wage of $2 for a 10-hour day; bi-monthly payment in lawful U. S. currency; freedom to trade in independent stores; reasonable rents; a revision of insurance, hospital and doctor fees; improvement in the sanitary conditions of the lumber camps and towns; disarming and discharge of company guards; and the right of free speech and free assemblage. (****)

(*) Ibid
(*) Department of Labor, Files of the Division of Conciliation.

(**) Ibid.

(***) Perlman and Taft, History of Labor in the United States, 1896-1932; The Macmillan Co., New York, 1935.

(****)Ibid.

The demand chosen to be pressed immediately was for a semi-monthly pay day. Under the once-a-month pay day it is reported that the employees were frequently forced to apply for advances in company scrip, good at face value only at company stores where, in some instances, prices were from 15 to 40 per cent above the outside prices. Nominally the employees had the option of taking their scrip to the independent stores, but at a discount which in some cases ranged from 25 to 40 per cent. The companies refused the demand and a strike followed. The strike was uneventful at first, but soon violence arose, resulting in the death of three union men and one company man. The Coroner's jury charged officers of the company with murder, but the grand jury returned indictments for first degree murder agsint 58 union members, and did not indict the officers of the company. Nine defendants were brought to trial early in October and a verdict of not guilty was returned. The murder charges against the other defendants were dismissed. (*)

Ten days after the verdict a strike involving 1,300 workers began at Merryville, Louisiana, for the reinstatement of the employees of the American Lumber Company who had testified for the defense. State troops were sent but immediately withdrawn. The lumber companies are reported to have encouraged a Good Citizen League, made up on non-union workers and business men in the West. The strike lasted seven months and, together with the union, was suppressed, according to the strikers, by the activity of vigilante committees. (**)

c. West Virginia.

About May, 1935, an organizer for the American Federation of Labor started a campaign to organize the timber and sawmill workers of the West Virginia hardwood field into locals of the Sawmill Workers' Union. (***) This organizer stated that by August, 1934, he had succeeded in organizing 5,000 workers and on August 6 called a general strike which affected 4,000 employees and 12 plants. The demands consisted of recognition of the Union, increased wages and signed working contracts.

From the date the strike was called until November 15, 1934 it was gradually settled on the basis of individual contracts with each mill which generally contained a repetition of 7-A of the National Industrial Recovery Act and called for the return of all strikers without prejudice at three and one-half cents an hour increase, and signed agreements. There does not seem to have been any direct recognition of the union, since the individual contracts were signed by a committee representing employees rather than a committee representing the union. However, the Director of Conciliation, Department of Labor, wrote the Secretary of one of the locals on October 18, 1934 that as bargaining was with the union officers, this might be considered as recognition. Possibly the employers did not understand their agreements to constitute recognition of the union, since in one mill the check-off system provided for in its agreement never operated. In two of the

(*) Ibid.

(**) Ibid.

(***) Department of Labor, Files of the Director of Conciliation.

agreements there was no increase in wages, but those employees living in company houses were allowed rent free. (*)

After the NRA decision of the Supreme Court on May 27, 1935, some of the operators endeavored to cancel their agreements by going back to a 48-hour week and cutting the wages to the previous scale, but these attempts appearted to be unsuccessful. The American Federation of Labor granted the Brotherhood of Carpenters and Joiners Jurisdiction over the locals, effective April 1, 1935. (**)

(*) Ibid.

(**) Ibid.

5. Wages

a. Sawmill and Millwork Combined.

The serious effect of business depression on hourly wage rates in the Lumber Industry is seen in the following average hourly rates, in cents, which show the rapid downward spiraling of such rates since 1929. These data represent the combined computed rates for the census classifications "Lumber and Timber Products" and "Planing Mills", otherwise referred to as "Sawmills" and "Millwork", respectively.

	1929	1930	1931	1932	1933	1934
Average Hourly Wage (cents)	45.6	44.9	41.2	34.2	33.9	43.6
Index (1929=100)	100.0	98.4	90.4	75.0	74.3	95.6

Source: Computed by Code Industry Analysis Unit, Division of Research and Planning, NRA, on following bases: N.I.C.B. times .792 from January, 1926, to December 1931; B.L.S. from January, 1932, to 1934, combining "sawmills" and "millwork" by using estimated total man-hours as weights.

It will be seen from the foregoing table that average hourly wages declined from 45.6 cents in 1929, the year preceding the depression, to 33.9 cents in 1933, or to 74 per cent of the 1929 level. At first the decline was slight, but it increased in severity during the years 1931 and 1932.

The codal year 1934 witnessed a very substantial recovery in wages, raising the 1933 rate of 33.9 cents to 43.6 cents, thus representing a gain of nearly 29 per cent over the low point of the depression.

Inasmuch as the weekly wage, rather than the hourly wage rate, determines the earnings of the worker, it will be of interest to examine the following average weekly wages for the same industry classifications:

	1929	1930	1931	1932	1933	1934
Average Weekly Wage (dollars)	21.14	20.21	16.78	12.41	12.60	14.43
Index (1929=100)	100.00	96.6	79.4	58.7	59.6	68.3

Source: Computed by Research and Planning Division, NRA, combining B.L.S. statistics for sawmills and millwork by using estimated number employed as weights.

It will be seen from a comparison fo the two preceding tables that average weekly wages declined much more drastically than average hourly wage rates, indicating the effect of reduced hours of employment. The 1933 weekly earnings of $13.60 represented less than 60 per cent of the 1929 earnings, whereas the hourly wage did not fall below 74 per cent of the 1929 level.

b. Sawmills and Millwork Compared

The following table compares average hourly wages in the sawmill (Census classification "Lumber and Timber Products") and millwork (Census classification "Planing Mills") branches of the industry for the years 1932-1934, the only years for which this comparison is available.

Branch of Industry	1932 (Cents)	1933 (Cents)	1934 (Cents)
Sawmills	33.0	33.0	43.5
Millwork	39.4	37.2	44.3

Source: U. S. Bureau of Labor Statistics

The foregoing table indicates that the differential between average hourly wages in the so-called sawmill branch of the industry, and the higher average hourly wages in the millwork or independent planing mill branch decreased steadily from 6.4 cents in 1932 to 4.2 cents in 1933 and 0.8 cents in 1934. This situation may be due to the reported increased competition which independent planing or millwork plants experienced from such plants operated in conjunction with sawmills.

Average hourly wages for 1934 have not as yet been computed by the Bureau of Labor Statistics, but figures for individual months, with the exemption of only the first three months, are well above the 1934 average. The 1935 hourly wages, by months, ranged from 42.3 cents in January to 47.2 cents in September for the sawmill branch, and from 44.0 cents in March to 46.0 cents in December for millwork.

Because of the importance of average weekly wages, the following comparison of such wages for sawmills and millwork may be helpful.

	1929 (dol.)	1930 (dol.)	1931 (dol.)	1932 (dol.)	1933 (dol.)	1934 (dol.)
Sawmills a/	20.62	19.68	16.00	11.77	12.33	14.30
Millwork b/	23.56	22.59	19.58	15.08	13.90	15.21
Sawmill Index (1929 = 100)	100.00	95.4	77.6	57.1	59.8	69.4
Millwork Index (1929 = 100)	100.00	95.9	83.1	64.0	59.0	64.6

Source: U. S. Bureau of Labor Statistics

a/ Census Classification "Lumber and Timber Products"

b/ Census Classification "Planing Mills"

From the foregoing table it appears that average weekly wages in the sawmill branch of the industry declined from $20.62 in 1929 to $11.77 in 1932, a money loss of 43 per cent, and that in millwork these wages declined from $23.56 in 1929 to $15.08 in 1932, a money loss of 36 per cent. In the latter branch, however, the loss continued into 1933, so that the average for that year was nearly 41 per cent below the 1929 level. The codal year 1934 showed considerable improvement in the weekly wages of both branches, the amounts of $14.30 for sawmills and $15.21 for millwork representing approximately 69 per cent and 65 per cent, respectively, of the 1929 wages.

c. Area Comparisons

The striking divergence between wages in the South and West is indicated in the following comparison of average hourly wage rates and weekly earnings in these areas:

AVERAGE HOURLY WAGE RATES AND AVERAGE WEEKLY EARNINGS IN THE LUMBER INDUSTRY (SAWMILLS) IN THE WEST AND SOUTH a/

Year	Average Hourly Wage Rates		Ratio of South to West	Average Weekly Earnings		Ratio of South to West
	West	South	Per Cent	West	South	Per Cent
1923						
June	$0.552	$0.270	49			
1925						
February to June	.533	.272	51			
1928	.557	.275	49	$26.01	$14.44	56
1930						
May to August	.558	.260	47	25.17	12.74	51
1932	.388	.170	44	14.24	7.11	50
1933						
July - Average	.366	.150	41	13.40	6.80	51
December - Average	.530	.290	55	13.83	8.44	61
1934						
Average first ten months	.548	.295	54	17.76	8.70	49

Source: Research and Planning Division, NRA, Report entitled "Hours, Wages and Employment", prepared for hearings on employment provisions of Codes, January, 1935, p. 58.

a/ "West" includes Oregon and Washington. "South" includes Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Virginia, Arkansas, Louisiana and Texas. Since the principal product of the Southern States is pine, which competes chiefly with the Douglas fir of the West Coast, the Southern States have been compared with the Western States where Douglas fir is produced Figures for Pre-code years are weighted averages of State averages appearing in the Wages and Hours Bulletins for the Lumber Industry published by the Bureau of Labor Statistics. Figures for 1933 and 1934 represent conditions in the Southern Pine and West Coast (Douglas Fir) Divisions, as reported to the Code Authority.

This preceding table indicates that average hourly wage rates in the Southern states were approximately one-half of those in the West Coast States of Washington and Oregon for the years 1923, 1925 and 1928, the 1928 averages

being $0.557 for the West and $0.275 for the South. It appears also that beginning in 1930 the excess of the Western average over that of the South increased until in July, 1933, just prior to the Code, the latter was only 41 per cent of the former. (*)

The effect of the Code appears to be reflected in the fact that in December, 1933, the fourth month of operation of the codal wage provisions, the Western average was 53 cents as compared with less than 37 cents in July, 1933, and the Southern average was 29 cents as compared with only 15 cents in July. It is also seen that under the Code the Southern average hourly wage rate represented a larger proportion of the Western average than at any other period covered by the table.

These statistics show that until 1934 the ratio of average weekly earnings in the South to those in the West was greater than in the case of average hourly wage rates, due, doubtless, to the longer average work-week in the South. In 1928 these Southern earnings averaged $14.44 as compared with $26.01 for the West -- a ratio of 56 per cent. Subsequent reductions brought these earnings down to $6.80 in the South and $13.40 in the West in July, 1933, representing a ratio of 51 per cent. These pre-code earnings in the West were approximately 50 per cent of the 1928 average and in the South were 47 per cent of the 1928 level.

The codal month of December, 1933, showed only a slight increase in average weekly earnings in the West, as contrasted with an increase of nearly one-third in the South over the July, 1933, earnings. During the ten months of 1934 this situation was reversed, for the $17.76 weekly average for the West in that period represented a substantial increase over that area's December, 1934, earnings, whereas the $8.70 average for the South was only slightly above the December level.

It has often been assumed that it costs much less to live in the South than in any other section of the country, and considerable stress was laid on this point in pre-code hearings on the subject of territorial wage rate differentials. One approach has been to compare in the South and in the North the prices of a large quantity of goods needed by a family. The defect of this method is that the goods priced are not used in both regions, and to this extent the comparisons are artificial. More corn bread, for instance, is consumed in the South and more wheat bread in the West and East. More rice is used in the South and less coal. (**)

Professor William F. Ogburn, of the University of Chicago, recently employed a different method of attack, using the percentage of the family income spent for food as an index of the plane of living, and on this basis reached conclusions which would throw some doubt on the existence of a large differential between living costs in the South and elsewhere. (***)

(*) The President's Reemployment Agreement went into effect in July, 1933.

(**) Ogburn, William F., University of Chicago, Does it cost less to live in the South? University of North Carolina Press, Social Forces, December (1935), pp. 211-214.

(***)Ibid.

Insufficient data have become available to enable definite conslusions on this point to be presented in the present report, but it is believed that such observations as those of Professor Ogburn indicate the need of further research on this subject and its importance as one factor in determining or justifying territorial wage rate differentials.

The following table compares average earnings per hour per employee and average full-time earnings per week per employee in logging camps and sawmills for three Southern states and three Northwestern states for the years 1928 and 1932. The data for these years afford a basis also of comparing pre-depression and bottom-of-depression earnings.

	1928		1932		Percentage of Decline from 1928	
	Logging Camps	Sawmills	Logging Camps	Sawmills	Logging Camps	Sawmills
Average Earnings per Hour per Employee:						
3 Southern States a/	$0.322	$0.292	$0.179	$0.181	44.4	38.0
3 N.Western States b/	.663	.556	.461	.393	30.5	29.3
Average Full-time Earnings per Week per Employee:						
3 Southern States a/	19.42	17.37	10.76	10.72	44.6	38.3
3 N.Western States b/	32.26	26.78	22.62	18.93	29.9	29.3

Source: Bureau of Labor Statistics, Bulletins No. 497 (1928) and No. 586 (1932), "Wages and Hours of Labor in the Lumber Industry in the United States".

a/ Arkansas, Louisiana and Mississippi.

b/ Oregon, Washington and Idaho.

This table indicates that in 1928 average earnings per hour per employee in logging camps and sawmills in the Southern states of Arkansas, Louisiana and Mississippi were approximately half of the Corresponding earnings in the three Northwestern states of Oregon, Washington and Idaho.

It also appears that average hourly earnings in the Southern states suffered more during the business depression than in the Northwestern states, since in 1932 the differentials between the two were considerably greater. It will be noted that in the Southern states these 1932 earnings represented declines from the 1928 earnings of 44.4 per cent and 38.0 per cent in the logging camps and sawmills, respectively, whereas in the Northwestern states these declines were 30.5 per cent and 29.3 per cent, respectively.

In average full-time earnings per week per employee the spread between the two areas under consideration was not so great as in hourly

earnings, due to the longer hours worked in the South. It is interesting to note, however, that the declines in 1932 from the 1928 level were almost identical with those for hourly earnings.

d. Payrolls

The long-time trend of payrolls in sawmills (Census classification "Lumber and Timber Products"), as well as seasonal fluctuations in such payrolls, are shown in the following indices, which are based upon the year 1929 as 100.

Index of Payrolls (1929 = 100)

Sawmills

	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Jan.	96.4	92.5	86.0	88.3	80.1	40.9	21.4	16.7	29.8	32.8
Feb.	101.5	94.3	89.6	91.5	78.7	40.8	21.0	16.0	32.8	36.7
Mar.	102.1	95.9	93.4	94.2	83.7	41.1	20.8	15.7	35.5	38.4
Apr.	105.4	94.8	96.3	100.4	83.8	39.7	21.2	16.6	38.6	40.6
May	109.0	100.7	99.5	105.8	82.8	41.1	21.5	19.0	41.5	34.5
Jun.	111.9	101.5	100.2	105.0	79.9	41.1	20.9	24.1	39.8	35.8
Jul.	107.0	97.8	97.8	106.2	70.2	37.8	19.6	28.7	25.8	39.3
Aug.	110.0	100.3	99.9	105.6	64.7	36.3	19.3	34.3	37.9	
Sep.	109.9	102.3	101.6	107.1	62.9	35.4	20.5	39.6	38.2	
Oct.	110.2	102.1	102.6	104.5	60.8	32.8	22.0	39.9	38.8	
Nov.	107.1	99.8	100.6	98.2	54.7	29.8	21.0	37.4	36.5	
Dec.	102.5	94.6	96.6	93.2	49.7	25.5	18.7	34.3	34.3	
Aver-age:	106.1	98.1	96.9	100.0	71.0	36.9	20.7	27.0	36.6	

Source: Derived from Bureau of Labor Statistics unadjusted index (1926 = 100) by adjusting to Census with NRA method.

It will be seen from the foregoing that payrolls in the sawmill branch of the industry declined from 1926 through 1928, rose slightly in 1929, and thereafter dropped sharply until 1932 when, at the bottom of the depression, these payrolls represented approximately 21 per cent of those in 1929, or a loss of 79 per cent. It will be observed also that after 1932 there was a gradual increase in these payrolls which continued into 1935.

Trends in millwork or planing mill payrolls, shown in the following table, are somewhat similar to those in the sawmill branch, except that in millwork the decline which began in 1926 continued without a break through the first half of 1933, so that the average payrolls for 1933, despite some improvement during the latter half of that year, were only 22 per cent of the 1929 level.

Index of Payrolls (1929 = 100)

Millwork

	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Jan.	122.0	107.1	92.2	95.3	77.1	53.1	34.3	17.7	22.5	26.2
Feb.	126.5	107.2	98.1	98.0	81.0	55.8	31.2	17.4	24.7	28.8
Mar.	128.9	108.0	100.0	104.3	80.4	56.3	28.4	15.1	26.4	29.4
Apr.	124.7	110.7	104.2	105.3	81.0	56.3	27.3	17.6	28.1	31.6
May	125.3	112.8	107.1	106.6	83.1	57.8	27.1	19.9	28.8	33.2
Jun.	126.4	113.4	109.4	106.1	80.5	55.6	25.1	23.1	27.5	35.9
Jul.	120.7	109.2	105.8	103.5	71.4	52.4	23.3	26.0	26.4	38.7
Aug.	125.8	113.4	107.6	106.5	70.9	50.8	23.3	27.2	26.4	
Sep.	121.8	107.9	104.8	103.6	66.0	44.9	22.3	27.5	24.8	
Oct.	124.2	107.6	105.2	100.0	65.3	42.2	22.4	26.8	27.5	
Nov.	121.1	102.4	102.8	87.3	61.3	39.8	22.2	25.2	27.3	
Dec.	117.0	101.3	100.4	83.0	60.0	39.1	20.1	25.0	28.0	
Aver-age:	123.7	108.4	103.1	100.0	73.2	50.3	25.5	22.4	26.5	

Source: Bureau of Labor Statistics Index shifted to 1929 base; NRA adjustment to 1933 Census.

An indication of composite payroll trends for both sawmills and millwork is afforded by the following table:

Index of Payrolls (1929 = 100)

Sawmills and Millwork

	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Jan.	102.0	95.7	87.3	89.8	79.5	43.5	24.2	16.9	28.2	31.4
Feb.	106.9	97.1	90.7	92.9	79.2	44.0	23.2	16.3	31.0	35.0
Mar.	107.9	98.5	94.8	96.4	83.0	44.0	22.4	15.6	33.5	36.4
Apr.	109.6	98.2	98.0	101.6	83.2	43.3	22.5	16.8	36.3	38.6
May	112.5	103.3	101.1	106.0	82.9	44.7	22.7	19.2	38.8	34.2
Jun.	115.0	104.1	102.2	105.2	80.0	44.2	21.8	23.8	37.1	35.8
Jul.	110.0	100.3	99.5	103.6	70.4	41.0	20.4	28.1	33.8	39.2
Aug.	113.4	103.2	101.5	105.8	66.0	39.4	19.9	32.8	35.4	
Sep.	112.5	103.5	102.3	106.3	63.6	37.5	20.9	37.0	35.3	
Oct.	113.2	103.3	103.2	103.5	61.8	34.8	22.1	37.1	36.4	
Nov.	110.1	100.4	101.1	95.8	56.1	32.0	21.3	34.8	34.5	
Dec.	105.6	96.1	97.4	91.0	51.6	28.4	19.0	33.3	32.9	
Aver-age:	110.0	100.3	98.3	100.0	71.4	39.7	21.7	25.9	34.4	

Source: Bureau of Labor Statistics data shifted to 1929 base by the Division of Research and Planning, NRA.

Estimated average weekly payrolls for sawmills and millwork over the period 1929 to 1934, inclusive, are shown in the following table:

Estimated Average Weekly Payrolls
(Thousands of Dollars)

	1929	1930	1931	1932	1933	1934
Sawmills	8,107	5,754	2,988	1,675	2,178	3,044
Millwork	2,239	1,638	1,127	571	501	594

Source: Computed by Research and Planning Division, NRA, applying payroll index of Bureau of Labor Statistics, shifted to 1929 base, against Census payroll statistics for 1929.

6. Hours

In 1932, which, in general, marked the bottom of the depression for the industry, the sawmill branch averaged 36.4 hours per week, and the millwork branch 34.9 hours, according to data of the Bureau of Labor Statistics. Unfortunately no official or other comprehensive data covering hours actually worked throughout the country are available for earlier years.

Average hours worked per week in the sawmill branch are presented by months for the years 1932 to 1935, inclusive:

AVERAGE HOURS WORKED PER WEEK

SAW MILLS

Month	1932	1933	1934	1935
January	33.6	33.1	31.8	33.4
February	35.7	33.4	33.0	34.7
March	36.6	34.6	34.8	35.3
April	35.7	36.2	34.7	36.4
May	37.2	40.4	34.3	33.2
June	35.6	43.0	34.1	37.3
July	35.4	44.1	32.3	36.8
August	36.5	43.1	33.3	39.3
September	38.2	37.1	33.2	40.0
October	39.3	34.7	33.7	41.1
November	38.6	34.4	33.1	38.9
December	34.5	32.1	32.9	39.9
Average	36.4	37.3	33.5	1/

Source: Compiled from data of the Bureau of Labor Statistics by the Division of Research and Planning, NRA.

1/ Not yet available.

It will be seen from the foregoing table that the average of 37.3 hours worked in 1933 was slightly above the 1932 average, but that during the codal year 1934 the average fell to 33.5 or nearly three hours below the depression low of 1932.

An average for the year 1935 has not been officially computed, but it is evident from the monthly averages that hours worked in that year considerably exceeded those in 1934. The Code for the industry, which was terminated by the Supreme Court decision of May 27, 1935, stipulated a maximum work week of 40 hours with certain exceptions. It is interesting to note that in June, 1935, the first month following termination of the Code, the average work week was about four hours in excess of that for the preceding month, and that for the balance of the year average hours continued to increase. The effect of the Code on hours of employment will be discussed later in this chapter.

AVERAGE HOURS WORKED PER WEEK

MILLWORK

Month	1932	1933	1934	1935
January	36.8	35.5	32.7	34.1
February	36.7	35.8	34.4	35.3
March	33.0	31.5	35.5	35.8
April	36.4	39.3	34.8	36.4
May	35.2	40.2	33.9	37.4
June	33.8	43.3	34.2	38.9
July	34.8	44.7	33.2	39.1
August	33.7	39.6	34.3	40.3
September	34.8	34.7	33.6	41.5
October	35.6	34.2	36.0	43.1
November	34.1	34.2	34.9	40.9
December	34.4	34.5	35.6	42.2
Average	34.9	37.3	34.4	1/

Source: Compiled from data of the Bureau of Labor Statistics by the Division of Research and Planning, NRA.

1/ Not yet available.

A comparison of average hours worked per week in the Southern states, which produce principally pine, with average hours in the West Coast states of Washington and Oregon, whose Douglas fir competes with the Southern pine, may be helpful. The basis for such a comparison is afforded by the following table, which covers the sawmill branch of the industry.

AVERAGE HOURS WORKED PER WEEK IN THE LUMBER INDUSTRY (SAWMILLS) IN THE "EST AND SOUTH", 1923-1934 a/

Year	West	South	Ratio of South to West (Per Cent)
1928.....	46.7	52.5	112
1930			
May to August.....	45.1	49.0	109
1932.....	36.7	41.8	114
1933			
July Average.....	36.6	45.3	125
December Average.....	26.1	29.1	111
1934			
Average first 10 months.....	32.4	29.5	93

Source: Report entitled "Hours, Wages and Employment", prepared for hearings on employment provisions of Codes, January, 1935, by the Research and Planning Division, NRA, p.58.

a/ "West" includes Oregon and Washington. "South" includes Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Virginia, Arkansas, Louisiana, and Texas. Since the principal product of the Southern states is pine, which competes chiefly with the Douglas fir of the West Coast, the Southern states have been compared with the Western states where Douglas fir is produced. Figures for pre-code years are weighted averages of state averages appearing in Wage and Hour Bulletins for the Lumber Industry, of the Bureau of Labor Statistics. Figures for 1933 and 1934 represent conditions in the Southern Pine and West Coast (Douglas Fir) Divisions, as reported to the Code Authority.

The foregoing table shows that average hours worked per week in the West declined from 46.7 hours in 1928 to 36.7 hours in 1932, the year which marked the depression low in production and employment, while in the South these hours declined from 52.5 hours to 41.8 hours during the same period. It is noteworthy that the decline in hours in each area during this period was the same, namely, 21.4 per cent.

In July, 1933, just prior to the approval of the Code, the hours worked averaged 36.6 in the West and 45.3 in the South, whereas for the codal month of December, 1933, the average had dropped to 26.1 hours for the West and 29.1 hours for the South, representing declines of nearly 29 and 36 per cent, respectively, from the pre-code average. Seasonality may have been a factor in this decline, but judging from the monthly averages given earlier in this report it is not believed that seasonality was an important factor.

Probably the most striking feature of this table is the indication

that whereas in 1928 average hours in the South were 12 per cent above those in the West, and whereas in July, 1933,(*) just prior to the Code, this differential had increased to 25 per cent, this situation was reversed during the first ten months of 1934, under Code operation, when the average for the South dropped to a level 7 per cent below that for the West.

Full-time hours in the industry have varied considerably between the South and the Northwest. The following comparison, based on data of the Bureau of Labor Statistics for three Southern states and three Northwestern states, indicates that full-time hours in the South have considerably exceeded those in the Northwest.

AVERAGE NUMBER OF FULL-TIME HOURS PER WEEK PER EMPLOYEE

	1928		1932	
	Logging Camps	Sawmills	Logging Camps	Sawmills
Three Southern States a/	60.4	59.4	60.2	59.3
Three Northwestern States b/	48.7	48.2	49.0	48.1

Source: Bureau of Labor Statistics, Bulletins No. 497 (1928) and 586 (1932), "Wages and Hours of Labor in the Lumber Industry in the United States".

a/ Arkansas, Louisiana, Mississippi.

b/ Oregon, Washington and Idaho.

7. Productivity

In 1929, the latest year for which complete Census returns are available, the eleven principal Southern producing states had 203,324 wage earners in the Census classification "Lumber and Timer Products", or 48 per cent of the total wage earners in this classification. The three leading lumber producing states of the pacific coast -- california, Oregon, and Washington -- had 115,234 wage earners, or only 28 per cent of the total. Yet despite the fact that the Southern states employed 76 per cent more wage earners than the Pacific Coast states, production by the latter, on a 48-hour single-shift week basis, aggregated 14,149, 301,000 feet board measure of lumber, as against 15,462,485,000 feet produced in the eleven Southern states on a 60-hour single-shift week basis.(**)

(*) The President's Reemployment Agreement began to be effective in July, 1933.

(**) Brief in behalf of the Southern Pine Industry, submitted to the National Industrial Recovery Board by P. A. Bloomer, February 2, 1935.

The production per wage earner in the Southern states in 1929 was 76,048 feet, against 122,798 feet per wage earner in the three Pacific states. Thus, the average Pacific Coast wage earner, working 48 hours a week, produced 61 per cent more lumber than did the average Southern wage earner working 60 hours a week. This is due mainly to the larger yield per log and per acre of standing timber obtained on the Pacific Coast, to the absence of hardwoods in the Pacific Coast production, and to the highly mechanized operations common to that region.(*)

A study of the productivity of labor in the Lumber Industry in the Pacific Coast states in 1929, made by the Bureau of Labor Statistics(**), revealed the fact that efficiency, as measured by man-hour productivity, depended more upon the extent of mechanization, and possibly wages paid, than upon such factors as size of plant. In fact, it was found that such efficiency decreased with the size of plant as measured by number of wage earners employed, especially for those mills which produced their own logs. It appeared that productivity did not increase with the size of mill as measured by either number of wage earners employed, aggregate output, or even aggregate horsepower, although for those mills which bought their logs there was some increase in productivity with increase in size of mill as measured by total output.

This study also revealed that for the Pacific Coast states those mills which paid the highest hourly wage sawed, on the average, about 40 per cent more lumber per man-hour than did the low-wage mills, but only about 30 per cent more per wage earner. The average wage cost per thousand feet of lumber sawed was much lower in the case of the high-productivity mills than of the low-productivity mills.

Referring again to this Pacific Coast study, it was found that the most reliable indicator of efficiency in this industry is horsepower per wage earner, the increase in productivity with increase in horsepower per wage earner being appreciable. It appeared also that the wage cost per thousand feet sawed was perhaps a little smaller in the case of those mills with much horsepower per wage earner than in the case of those with little horsepower per wage earner.

Probably the most reliable available basis for a study of relative productivity of labor in the industry is afforded by a special tabulation made by the Bureau of the Census for use in this report. This tabulation shows lumber production per man-hour in the year 1929 in 372 selected establishments in the Census classification "Lumber and Timber Products" industry; by districts and states. These establishments were selected from, and represent, about one-fourth of those lumber producing establishments which reported individually products valued in 1929 at $100,000 or more. They represent, therefore, the larger establishments. All of

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(*) Ibid.

(**) U. S. Bureau of Labor Statistics, Productivity of Labor, Monthly Labor Review, October, 1932.

them produced lumber and most of them manufactured planing mill products also. In calculating the amount of lumber produced per man-hour, the number of feet of rough lumber has been divided by the total number of man-hours worked in the establishments covered by the table. Thus the dividend refers to rough lumber only, whereas the divisor represents the labor employed both in producing rough lumber and in remanufacturing a part of it.

The following table presents these productivity data, summarized for the three grand divisions: North, South and West:

Area	Number of Establishments	Number of Wage Earners (average for year)	Lumber Produced per Man-hour (Ft.b.m.)	(Per Cent)
Total	372	79,093	47 Avg.	100.0 Avg.
The North a/	74	11,675	24	51.1
The South b/	130	20,177	28	59.6
The West c/	168	47,241	62	131.9

a/ Maine, New Hampshire, Vermont, Massachusetts, New York, New Jersey, Pennsylvania, Michigan, Ohio, Indiana, Illinois, Wisconsin, Minnesota, South Dakota, Iowa, Missouri, and Kansas.

b/ Maryland, West Virginia, Virginia, North Carolina, Kentucky, Tennessee, South Carolina, Georgia, Florida, Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, and Texas.

c/ Montana, Idaho, Colorado, New Mexico, Washington, Oregon, and California.

The foregoing data reveal that the average man-hour production of the 372 establishments covered was 47 ft. b.m. This average is not representative of man-hour production in any one of the three great areas covered, namely 24 feet in the North, 28 feet in the South, and 62 feet in the West. The man-hour production in the North and South was 49 and 40 per cent, respectively, below the average for all the establishments, whereas the man-hour production in the West was 32 per cent above the average.

Limiting the comparison to the South and West, the main lumber producing areas, it is found that the average man-hour production of the West represented an increase of more than 121 per cent over the average man-hour production of the South.

The variations among the several areas and states in the amount of lumber produced per man-hour are due to a number of causes, the most important of which are the degree of mechanization and amount of horsepower available per worker, the size of logs sawed, the average timber stand per acre, the degree of softwood production, and the size of the

product. In all of these respects the West excelled. It is interesting, for instance, to note that the State of Washington, whose production per man-hour of 96 feet excelled that of any other state, had the greatest average stand per acre of industrially-owned saw timber, namely, 45,283 feet.(*) As in the case of the other factors just mentioned, however, there is no complete correlation between average timber stand and productivity per man-hour, owing to the effect of other factors.

It is interesting to note in connection with the foregoing comparison that the average number of wage earners per establishment covered was much greater in the West than in the South and North, the averages being as follows: West, 281; North, 158; and South, 155. This does not indicate that the samples in question are not representative, but rather indicates that the average Western establishment is larger than is found elsewhere.

8. Code Labor Provisions and Their Interpretation

The Code of Fair Competition for the Lumber and Timber Products Industries, which was approved by the President August 19, 1933, was adopted only after an active period of code formulation during which strenuous efforts were made by the industry to harmonize its varied interests and at the same time satisfy requirements of the National Industrial Recovery Administration. In view of the wide scope of the industries covered by the code, from the standpoint of location, products, markets, labor, etc., it is not surprising that the proposed code, as finally approved, represented a considerable degree of compromise. This is certainly true of the labor provisions of the code, which are covered in the following discussion.

a. General Labor Provisions

The general labor provisions found in Article V of the code contained the usual provisions required by the National Industrial Recovery Act, namely, assurance of the right of the employees to organize and bargain collectively through representatives of their own choosing; freedom from interference of employers in these respects; the right of employment free from requirement to join a company union or to refrain from joining, organizing or assisting a labor organization of their own choosing; and the requirement that each employer comply with the standards of wages and hours and other conditions of employment approved or prescribed by the President.

An outstanding provision in view of the hazards of this industry was the prohibition of employment of any individual under 18 years of age, except boys 16 years and over who might be employed in the Wooden Package Division and in non-hazardous occupations during school vacations or in case there were no wage earners of 18 years or over in their families.

The Code contained no specific provision covering handicapped workers. However, this was taken care of by Executive Order 6606-F, of

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(*) Table IV, Stand per Acre on Saw Timber Areas.

February 17, 1934, which permitted handicapped workers to be employed at light work at wages below the codal minimum on condition that the employer obtain a certificate in each case from State authority designated by the U. S. Department of Labor. Employers hiring such persons were required to file monthly reports covering such employment.

It was known to the Deputy Administrator's office (*) that handicapped workers were employed at less than the codal minimum wage rates under authority of this Order, since evidence of this was presented from time to time in connection with specific cases that came before the compliance councils. No statistics are available, however, showing the extent of such employment.

There were no apprentice or learner provisions in the Code. Other than handicapped workers, who were taken care of by Executive Order 6606-F (discussed earlier in this chapter), no one was permitted to be employed in the industry at less than the minimum wages set forth in Article VII. (**)

Considering the wide scope of the industry covered by the Code, the interpretations of its labor provisions, made by the Code Authority and its agencies, were very few in number. Likewise very few, if any, of these interpretations were opposed by the NRA. (***) These interpretations will be discussed under the appropriate heads, according to the type of provision.

b. Hour Provisions

Article VI prescribed a 40-hour maximum work-week, subject to certain specified exceptions. These exceptions included executives and supervisory personnel, traveling sales force, and camp cooks for whom no hourly limitation was made; employees such as watchmen, firemen, and repair crews, where the nature of their work required that the hourly maximum be exceeded, constituting not more than 10 per cent of the employees in any operation, in which cases time and a half must be paid for overtime, and temporary employment in cases of emergency. For none of these exceptions was there any limitation with respect to hours.

To provide further flexibility it was stipulated that the Administrative Agency of a Division or Subdivision might authorize employment in a seasonal operation for a maximum number of hours not exceeding 48 in any week, with the exception of parts of an operation depending on climatic conditions, such as stream driving and sled hauling, in which a greater excess was authorized; provided that average employment in any seasonal operation in any calendar year did not exceed the standard schedule.

(*) History of the Code of Fair Competition for the Lumber and Timber Products Industries, NRA, p. 307.

(**) Ibid.

(***) Ibid. p. 308.

It was further provided that manufacturers of woolen packages for perishable fruits and vegetables might be authorized by the Administrative Agency of the Wooden Package Division to exceed the standard schedule for a period not to exceed four weeks for any one crop, when required to furnish packages for any perishable crop, provided that the average employment of any individual in any calendar year did not exceed the standard schedule. Here again was a provision for long-time averaging of hours which was fraught with administrative difficulties.

A striking feature of these codal hourly provisions was the failure to restrict daily working hours in any way. In view of the extent of seasonal operations in this industry, the above provision for permitting an excess of codal maximum hours per week in such operations was also noteworthy, especially since it permitted the averaging of weekly hours over an entire calendar year. Averaging over such an extended period was obviously very difficult to check on the part of the enforcement agencies.

Article VI, which prescribed maximum hours of labor in the industry, was interpreted, in general, (*) as not applying to an independent contractor owning his own truck and driving it himself.

Article VI, Subsection A (2) a, which excepted certain personnel from the maximum hour provision, was interpreted by the Lumber Code Authority June 20, 1934. (**) According to this interpretation, "Executive" included executive officers and their personal secretaries, traffic managers, sales managers, auditors, legal advisors and other department heads, while "supervisory" included all persons who plan for, direct, or superivse the work of other employees. "Cooks" were interpreted to include all employees who have to do with preparing and serving of meals.

Article VI, Subsection A (2) b permitted regular employment for watchmen, firemen, repair crews, etc., beyond the codal maximum where required by the nature of their work, for not more than 10 percent of the employees in any operation, but required the payment of time and one half for overtime.

This provision was interpreted by the National Control Committee on October 10, 1933 (***) as rather broad and as applying to employees such as watchmen, firemen and repair crews who, by the nature of their work could not conveniently comply with the maximum hour limitation. A truck driver engaged in long distance hauling was stated to fall within the terms of this exception.

(*) Lumber Code Authority, June 20, 1934. Code Authority Bulletin, Volume II, No. 51, August 3, 1934, P. 1

(**) Lumber Code Authority Bulletin, Vol. II, No. 51, August 3, 1934, p. 1. (Supersedes rule N.C.C. of August 21, 1933)

(***) Lumber Code Authority Bulletin, Vol. 1, No. 128, p. 2, May 28, 1934.

It was interpreted also that teamsters might come within the terms of this exception if a declaration to that effect were made by the Division or Subdivision Agency under whose jurisdiction they came. It was ruled also that employees while actually engaged in inventory taking could be classified under this exception where such work could not be done during regular hours.

Article VI, Subsection A (2) c, which excepted from the maximum hours of the Code temporary employment in case of emergency, was interpreted by the National Control Committee October 10, 1933, (*) by way of limiting "emergency" to such events as fire, flood, tornado, accidents to equipment and the like, and not to be construed as covering such matters as a large excess of orders or any other matters under the jurisdiction of the Code.

c. Wage Provisions

The Code, in Article VII, specified two sets of basic minimum wage rates; i.e., minima for various divisions and subdivisions ranging from 23 cents to 45 cents per hour on territorial and population bases; and, where no such specific minima applied, a general minimum of 40 cents per hour.

For those receiving more than these codal minimum rates up to $30 per week, it was required that the existing wage differentials be maintained.

It was further specified that the minimum compensation for workers employed on a piecework or contract basis must not be less than the codal minimum wage for the number of hours employed.

Several general interpretations were made of Article VII, which prescribed minimum wages. The Resident Committee, on May 25, 1934, and the National Control Committee, on July 2, 1934 (**), specified that the time spent by an engineer in getting ready for the day's work prior to starting time need not be deducted from the hours of regular employment nor compensated for, provided that the employee be not required to be on the premises for a period "longer than that for which he is compensated".

The National Control Committee, on July 2, 1934 (***), ruled that the use of company scrip where the employee was unwilling to accept it was a violation of this Article, but that the Authority did not feel it could validly object to the payment of employees in company scrip, provided there was no state law prohibiting its use, and provided the employee was willing to accept it.

(*) Ibid.

(**) Lumber Code Authority Bulletin, Vol. II, No. 51, p. 1, Aug. 3, 1934.

(***) Ibid. same page.

Article VII, Subsection A (1), which required that the minimum compensation for workers employed on a piecework or contract basis be not less than the codal minimum wage for the number of hours employed, was interpreted by the National Control Committee, June 7, 1934 (*) to be a matter of averages rather than of the amount earned in any one day. Payment in such cases was interpreted as a question of the total amount earned in the period from pay day to pay day. The average rate of the total amount paid for work done from pay day to pay day could not be less than the minimum rate specified for the class of work performed.

It was also interpreted (**) that any person subject to the jurisdiction of the Code who employed or dealt with contractors must not only provide in his contracts for code compliance but must take all reasonable steps necessary to assure such compliance.

Article VII, Section A (2), prescribed that the existing amounts by which minimum wages in the higher paid classes, up to workers receiving $30 per week, exceeded minimum wages in the lowest paid classes, must be maintained. This was interpreted by the National Control Committee on October 11, 1933 (***) as meaning that only two figures are necessary to determine the "existing amounts", these being the minimum wages under the Code, and the prevailing "minimum wages in the lowest paid classes" at the time the Code was approved by the President. The difference between the two determined the amount by which wages in the higher paid classes in effect at the time the Code was approved must be increased in order to conform to the provisions of Article VII (a) 2.

In the case of salaried employees, according to this interpretation, the weekly or monthly wage must be reduced to an hourly wage by dividing the total wage by the average number of hours previously worked. The increase per hour was then to be added to the hourly wage and the new weekly or monthly wage ascertained by multiplying by the number of hours permitted under the Code. It was interpreted that the Code imposed no requirements with respect to the maintenance of weekly or monthly earnings.

It was also interpreted that in applying this section the wages to be considered were the prevailing minimum wages paid in the particular mill, plant or factory in question, or that, on the other hand, the application might be broadly applied to operators within a Division, Subdivision or group. It was interpreted that the Code was not specific in this respect and was subject to either of these interpretations by the agency of the Code Authority.

(*) Ibid. pp. 1 and 2.

(**) National Control Committee's interpretation of December 22, 1933 in Lumber Code Authority Bulletin, Vol. I, No. 128, P. 2, May 29, 1934.

(***) Lumber Code Authority Bulletin, Vol. I, No. 128, p. 3, May 29, 1934.

It was further interpreted that "existing amounts" as used in this section referred to the differentials in cents per hour between the lowest and the higher paid classes at the time of the approval of the Code, August 19, 1933. It will be noted that such an interpretation is quite different in application from the maintenance of differentials on a percentage basis.

With reference to Article VII, (a) 3, which prescribed that charges to employees for rent, board, medical attendance, and other services must be fair, it was ruled (*) that until further regulations on this subject should be issued, each operation was required to advise the appropriate Division agency of any added charges, and of any advances in the charges imposed on employees for such services since the approval of the Code, together with supporting evidence. In the event that the Division agency was of the opinion that the advance was not justified or tended to circumvent the Code in letter or in spirit, the operator was to be required to amend such charges to comply with the codal requirement that they be "fair" to employees.

With reference to the question as to whether an employee could be required to live in a company-owned house, the Resident Committee ruled on May 25, 1934 (National Control Committee, July 2, 1934) (**) that the matter of bargaining as to whether or not an employee might be required to live in such houses as a pre-requisite to his employment was not covered by the Code, but that if rent for these houses was excessive, such charges constituted a violation of the Code.

In response to the question as to whether deductions from wages might be made by employers for board and services if such services were furnished by concessionaires, the Resident Committee ruled June 19, 1934 (National Control Committee, September 10, 1934) (***) that the Code Authority had no jurisdiction over concessionaires or their methods or means of collecting their charges.

Article VII (B) specified that minimum wages could not be less than 40 cents per hour unless in any Division or Subdivision the prevailing hourly rate for the same class of employees on July 15, 1929 was less than 40 cents per hour, for which cases a schedule of rates was set forth. This provision was interpreted by the National Control Committee October 10, 1933 (****) as merely stating the principle applied by the Administrator in determining the minimum rates of wages specifically set forth in subsection D of the same Article, and therefore not to be applied in determining wages to be paid by any person under the jurisdiction of the Code.

(*) National Control Committee, October 11, 1933, Code Authority Bulletin Vol. I, No. 106, P. 3.

(**) Lumber Code Authority Bulletin, Vol. II, No. 51, p.2, Aug. 3, 1934.

(***) Lumber Code Authority Bulletin, Vol. II, No. 67, p.1, Nov. 16, 1934.

(****) Lumber Code Authority Bulletin, Vol. I, No. 128, p.3, May 29, 1934.

9. Operation of Code Labor Provisions

a. Child Labor Provisions

The need for the child labor restriction of the Code, mentioned previously in connection with general labor provisions, was shown earlier in this chapter. It was seen that in 1930 there were 20,761 persons under 18 years of age employed as lumbermen, raftsmen, wood choppers and in saw and planing mills, 4,228 of these being between the ages of 10 and 15 and the balance between 16 and 17 years of age. The need for protecting such minors was emphasized by the records of the National Safety Council, which indicate that the lumbering industry ranks among the most hazardous of industries.

The codal provision prohibiting the employment of individuals under 18 years of age with certain exceptions, was designed to meet the need for the protection of minors. Between July 21, 1934 and May 27, 1935 the Compliance Division received 28 allegations of violation of this provision of the Code, representing only 1.6 percent of all allegations received of violation of all labor provisions. Thus it appears that this provision was very generally observed. (*)

b. Hourly Provisions

The effect of the codal hourly restrictions on actual hours worked is a matter very difficult to determine, owing to the numerous factors involved, which are principally the following: (1) the failure to provide any codal restriction of daily working hours; (2) the exceptions to the codal maximum work week and the provisions in certain cases for averaging weekly hours over an entire calendar year; and (3) production control under the Code, which provided for allotment of production on a general basis of 30 hours per week, or 10 hours below the general codal maximum work-week, but permitted this allotment to be worked out on a quarterly basis, thus allowing mills to produce their entire allotment as rapidly as desired, subject only to the weekly restrictions of the Code. The influence of this last factor in reducing hours of employment below the level permitted by the Code would depend upon whether the individual operator found it advantageous to work out his entire quarterly allotment in a short time at full codal hours, multiple shifts, or both, or on the other hand, whether he found it advantageous to spread his quota more evenly over the entire quarter. Just how this worked out in actual practice can not be accurately determined at this time.

The fact remains, however, that, according to statistics presented earlier in the chapter, average hours worked per week in the sawmill branch were above 40 hours for the months of 1933 just prior to the effective date of the Code, being 40.4 hours in May, 43.0 hours in June, 44.1 hours in July, 43.1 hours in August (the hour provision did not become effective until August 22), whereas for the balance of the year

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(*) History of the Code of Fair Competition for the Lumber and Timber Products Industries, NRA., pp. 306, 307.

these hours decreased and never again reached the 40-hour level until after the elimination of the Code in 1935.

The records of the Litigation Division showing the number of cases of Code violation being prepared, those in Court, and those closed, are of little or no help as an indication of the extent of compliance with the hourly provisions of the Code, inasmuch as violations of such provisions were lumped together with other violations and can not now be segregated.

The following analysis of violations of hourly provisions of the Code, found in the files of a Deputy Administrator, can not be checked by other data, but may be helpful principally as indicating the relative volume of complaints in principal producing areas of the industry. It is possible that these statistics merely relate to violations charged, without any check as to the justification of such charges.

Analysis of Violations of Hourly Provisions
of the Code charged in Complaints
July 1 to December 29, 1934

Producing Area	Number of Violations Charged	Percentage of Total
Southern Pine	492	53.5
Southern and Appalachian	128	13.9
West Coast	59	6.4
Western Pine	118	12.8
All Others	123	13.4
Total	920	100.0

Source: Code Administration Study, Preliminary Report on Lumber and Timber Products Industry, March 30, 1935, p. 147.

It will be seen from the foregoing table that more than half of the complaints concerned the Southern Pine area and only six percent related to the West Coast. Western Pine and the Southern and Appalachian areas ranked close together with 13 and 14 percent, respectively, of the total complaints.

c. Wage Provisions

The industry's compliance with the Code wage rates was initially quite high. (*) In some Divisions and Subdivisions, such as Hardwood

(*) History of the Code of Fair Competition for the Lumber and Timber Products Industries, NRA, p. 294.

Dimension, Northern Hardwood, Woodwork Division, West Coast, Western Pine and other Western divisions, voluntary compliance with these provisions held up fairly well, while in the large and influential divisions of the lumber manufacturing branch in the South --such as the Southern Pine Division and the Southern Hardwood Subdivision -- the degree of compliance declined steadily in the face of continued lack of effective action in the field of enforcement. This is a matter of record in the correspondence files of the office of the Deputy Administrator in charge of the Code.

As in the case of violations of hourly provisions of the Code, the following analysis of violations of the wage provisions, found in the files of a Deputy Administrator, can not be checked by other data but may be helpful mainly as indicating the relative volume of complaints in principal producing areas.

Analysis of Violations of Wage Provisions
of the Code charged in Complaints
July 1 to December 29, 1934

Producing Areas	Number of Violations	Perdentage of Total
Southern Pine	597	39.1
Southern and Appalachian	514	33.7
West Coast	113	7.4
Western Pine	52	3.4
All Others	251	16.4
Total	1,527	100.0

Source: Code Administration Study, Preliminary Report on Lumber and Timber Products Industry, March 30, 1935, p. 147.

The foregoing table indicates that the Southern Pine and Southern and Appalachian regions together accounted for nearly 73 percent of the violations of wage provisions charged in complaints, whereas the West Coast and Western Pine regions accounted in the aggregate for only 11 percent.

The Code Authority's attitude toward these wage provisions was set forth in the following testimony by David T. Mason, Executive Officer of that body, before the Senate Finance Committee on April 16, 1935:

> "Lumber Code minimum wage rates for most of Western United States are higher than those set in most other codes .... Prior to the approval of the Code, minimum wages in the South in our industries averaged slightly below 12 cents per hour. The Lumber Code when presented to NRA by industry representatives on July 10, 1933, placed Southern minimum wage rates at 20 cents per hour. General Johnson stated that 20 cents was wholly unacceptable.

> The industry then revised to 23-1/2 cents and so stated at the public hearing beginning July 26, 1933. In the post-hearing conferences, under pressure from NRA, the Southern minimum was raised to 23 cents, or more than 100 per cent above the previously prevailing average minimum . . . Since the approval of the Code many complaints have come in that the Code is oppressive and destructive of small enterprises in the South because, as is asserted, the minimum wage rate is too high.
>
> . . . . . .
>
> "Lack of effective enforcement of the minimum wage rate in the South is the most important cause contributing to the present crisis of the Lumber Code."

With reference to the allegation referred to above, that the Code was oppressive and destructive to small enterprises in the South, it should be noted that the same testimony stated that the Federal Trade Commission made an investigation of the situation in the South and on May 7, 1934 reported in effect, that the operation of the Code was not discriminatory against small enterprises.

This testimony also indicated that the Code represented an effort to restore 1929 minimum hourly wage rates, and that this standard was followed, excepting in certain parts of the country where such 1929 rates were below 30 cents per hour, in which cases the Code rates were established at a level higher than in 1929. It was claimed that the result for the whole industry was an average minimum wage rate higher than at any time since 1920.

In estimating the effect of the Code on hourly wage rates and weekly earnings in the industry, the following data, which were presented in a more detailed table earlier in the chapter, may be helpful:

Average Hourly Wage Rates and Average Weekly Earnings in the Lumber Industry (Sawmills) in the West and South

Period	Average Hourly Wage Rates		Average Weekly Earnings	
	a/ West	b/ South	a/ West	b/ South
1933				
July Average	$0.366	$0.150	$13.40	$6.80
December Average	.530	.290	13.83	8.44
1934				
Average first 10 months	.548	.295	17.76	8.70

Source: Research and Planning Division, NRA, Report entitled "Hours, Wages and Employment", prepared for hearings on employment provisions of codes, January, 1935, p. 58.

a/ Includes Oregon and Washington.

b/ Includes Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Virginia, Arkansas, Louisiana and Texas.

The preceding table indicates that average hourly wage rates during the first ten months of 1934, all under the Code, were $0.548 in the West and $0.295 in the South. These rates represented increases over July, 1933, just prior to the Code, of approximately 18 cents in the West and 15 cents in the South, and in terms of percentage were nearly 50 percent and 97 percent, respectively, above the pre-code level.

The foregoing statistics also show that the average weekly earnings in July, 1933, were $13.40 in the West and $6.80 in the South, and that for the first ten months of 1934 these earnings increased to $17.76 and $8.70, respectively. In terms of money these gains were $4.36 and $1.90 for the West and South, respectively, but in terms of percentage the increases were more nearly equal, being approximately 33 per cent for the West and 28 per cent for the South.

The fact that during the codal period under discussion average weekly earnings increased to a lesser degree than average hourly wage rates was due to the decreased working week in 1934.

G. PRODUCTION CONTROL

In previous sections some of the problems of timber supply liquidation have been discussed, and as a basic conclusion it was stated that both the public and the forest industries have an interest in seeing that ample supplies of forest products are continually available at reasonable prices and that stability of employment through industry prosperity is maintained. The removal of all possible obstacles to that result is the obligation of both the industry and the public.

Although any prediction of future forest product requirements is largely speculative, sufficient facts are available to clearly indicate that a timber famine is improbable if conditions and trends, reasonably comparable to those of the past ten years, are continued. This does not mean that reasonable care should not be taken of the National forest and commercial forest areas, in the interest of both the industry and the public, nor that shortage of certain species, if not complete exhaustion, are not likely to occur. It does mean, however, that the forest problem in the United States as a whole is not one of timber shortage but rather one of proper protection and management of the forest areas, including adjustment of production of forest products between and within the various regions so as to secure the best results from existing forest growing stock.

In the begining the most available timber was converted into lumber, which meant low production cost. These costs increased as the industry continued its logging operations in continuously widening circles and had to go farther and farther back in rougher country to meet the timber. As the areas of virgin timber began to fall in availability new forest areas were opened up farther away from the market, thus increasing the cost of delivery which in some cases became as great as the total of all other costs.

Thus the industry was faced with two alternatives, either to get a higher price for the products or to reduce cost through more efficient methods of manufacture. And both courses were resorted to. The quality of the product was improved and logging and milling methods were revised to produce at a lower cost. In spite of these efforts, the increasing cost of holding timber due to interest, taxes, and other carrying charges, necessitated such a high price for the products that many substitutes were able to successfully compete with lumber, and made possible the exploitation of young, immature timber which had been left uncut, or had grown up after previous cuttings over the same areas.

Up to about 1921-1923 lumber prices were generally increasing thus compensating in part for the higher production costs. About this time, however, the competition of other materials became acute, with the result that lumber prices could no longer be maintained. Furthermore, stumpage prices began to decline for the first time in history. Thus many units of the industry, faced with steadily mounting carrying charges found themselves forced to a policy of liquidating their areas of standing timber almost without consideration of either the ability of the market to absorb the manufactured products or of its cost. Up to the time that the Lumber Code became effective the industry in general, through pressure of various

economic forces, was virtually compelled to adapt itself to this procedure.

There were many deviations from the above-cited long trend. For example, whenever a satisfactory price position was reached new manufacturing facilities would enter the production field and existing ones would be increased in capacity. Overproduction would then inevitably follow, with a resultant price drop, again forcing the high cost operations to close down and stay down until curtailed production and increased prices permitted them to again operate their plants.

All of these factors have played a part in removing incentives to large concentrations of ownership and toward the breaking up of large tracts into a multitude of smaller ownership interests with decreased feeling of responsibility for eliminating excess mill capacity and overproduction.

The era prior to 1923 was also one of lessening of virgin timber supply in the main producing region of Southern pine, which made it economically possible for the West Coast operations through expanding use of the Panama Canal, to enter the Eastern market and unload some of the products of the tremendous mill capacity which they had developed. By 1929 they had wrested the supremacy of production from Southern pine, but the pressure exerted by their invasion had forced prices down from the former level and, it was claimed, below the cost of production. With the continued decline of price and surplus of unsold stocks of lumber accentuated by the depression, the demand for production control and coincident price control became insistent.

This can be attributed to two major conditions: (1) the ownership of large tracts of virgin timber in the hands of people who were either unable to carry it, or to whom it was proving a burdensome problem, and who in innumerable cases were manufacturing the timber into a product which the market did not demand, and consequently were sacrificing their investment without corresponding accrual of benefits. This was prevalent over large areas and involved millions of acres of timber; (2) the premature cutting and destruction annually, of millions of acres of young timber which was not large enough to produce good lumber, having been held through the period of the least volume growth and was being manufactured instead of being allowed to reach maturity.

Both of these conditions raised the need for effective relief for the holders of the timber who in the past had been forced to cut to realize cash for accumulating interest and taxes, and to obtain a livelihood from their holdings. In view of the need of the holders of this timber to cut and produce, and in order that the pressure of liquidation may not in the future cause the distress attendant on the overproduction of the past, with the corresponding decline in price, some sort of production control would seem necessary. In view of the multitude and diversity of ownership interests, and types of operations engaged in the production of lumber and the difficulties of maintaining an adequately balanced supply it can be seen that it is a very difficult problem to effectually protect our forests from wasteful and premature cutting and destruction and provide for conservation of our National Resource.

The subject of control of production has been decreased by the industry for many years but the problem did not attain sizeable proportions until 1924, at which time the West Coast producing region with its tremendous supply of virgin timber and its extensive mill capacity, shipping through the Panama Canal, began to dominate the eastern market, and the lack of earnings of this industry, as compared with others, became recognized and was largely attributed to overproduction. In November, 1925, a movement to consolidate a considerable number of mill and timber owning companies was sponsored by a member of West Coast operators representing an estimated 30 per cent of the production of Douglas fir, backed by Baker, Fentress & Company, The Commercial Trust and Savings Bank of Chicago, and Dillon, Reed & Company, of New York. By the time the details of this merger became public, a number of other mergers were being proposed and discussed, but as a result of careful investigation it was found that profits in the industry were decreasing to such an extent that there would be no probability of servicing and retiring the securities necessary to finance any merger, and the plans were dropped. This subject was again brought up in 1931, with the same result.

About this time the Oil and Coal industries, independent of each other, and of the Lumber Industry, were seeking production control of some sort both in the States and nationally and it may be that what they were doing had at least a suggestive effect upon the Lumber Industry. At any rate conversations in regard to control began, and continued, until early in 1926. Then came into being The Committee of Fifteen, the membership consisting of outstanding lumber-men from the West, South, and Lake States, to formulate plans for production control. Among the plans evolved was one for a Director General, as in organized baseball or in the Moving Picture Industry. The result of work of this Committee was intangible but at least made the industry more conscious of the problems before them clamoring for solution.

In the period immediately following, many other plans were discussed and worked on, one of which was the attempt by the National Lumber Manufacturers Association in 1928 to affiliate with the Coal and Oil industries to obtain legislation for the control of production as a natural resource, which overture was rejected by the Coal and Oil Industries. Other major plans were The Holding Company Plan in 1928; The Hardwood Conservation Plan in 1928; The West Coast Advisory Plan in November, 1929; The Compton Plan in 1930; Southern Pine Curtailment Plan in 1931; and the Fir Stabilization Plan in 1932. That the Government recognized the problem is shown in the U. S. Timber Conservation Board report in 1930, (the "Copeland" report generally referred to as Senate Document No. 12,) and by the fact that steps were taken to relieve the situation by the starting of the Federal acquisition of timber lands in 1931. Mention should be made of the Wisconsin Stabilization Agreement promulgated in 1931, for the control of production, under State sanction.

All available material clearly shows that many operators, probably a majority of those involved, approved the above-cited plans, but that always a few large operators "who never cooperated" either objected or failed to assist and caused the abandonment of these plans.

In March, 1932, agitation began among a number of industries, including the Lumber Industry, for relief from the anti-trust acts. In the Lumber Industry apparently the motivating force was the desire to control production. The idea seemed to many lumbermen to be so fair, so easy to put into effect, and so beneficial to the public, as well as to private lumber interests, that they began to feel certain that it would settle most of their problems and that the entire industry had concentrated on, and approved it. During this period at least two types of control were considered, one, a Commission to be appointed by the President; and the other a joint committee composed of five members each of the House of Representatives, and of the Senate. Legislation was proposed along these lines but never passed.

A complete description of each of these proposals has been prepared by former Deputy Administrator A. C. Dixon, and is attached as Appendix III of this report.

The need and demand for production control was further intensified by the continued reduction of per capita consumption of lumber which, as shown in previous sections of this report, declined steadily from 525 feet in 1906, to 90 feet in 1934.

The opportunity to make effective the plans and hopes of the industry for production control came in 1933, under the NRA, when industry was invited to present their plans for cooperation between industry and Government under Codes, and as one of the features of the Lumber Code, Article VIII, entitled "Production Control" was approved in Code No. 9, on August 19, 1933.

The Code in part provided as follows:

> "This is an undertaking in industrial self-government under such public sanctions as are necessary to carry out in the lumber and timber products industries the purposes of the National Industrial Recovery Act. It is the declared purpose of the lumber and timber products industries and the adherents of this Code to reduce unemployment in the industries reported, improve standards of labor, maintain a reasonable balance between production and consumption, restore prices to levels which will avoid further depletion and destruction of capital assets, and to conserve forest resources and bring about sustained yield from the forests.
>
> The applicant organizations shall, with the approval of the President, establish and empower a suitable agency named "Lumber Code Authority, Incorporated" hereinafter referred to as the authority to administer this Code in conformity with the provisions of the National Industrial Recovery Act under the authority of the President.
>
> The Authority shall issue and enforce such rules, regulations, and interpretations, and impose upon persons subject to the jurisdiction of this Code such restrictions as may

be necessary to effectuate the purposes and enforce the provisions of this Code.

The Authority may delegate to said agencies all necessary power and authority for the administration of this Code within the Divisions and Subdivisions, including the adoption of Divisions and Subdivisions code provisions within the scope of the power granted under this Code and not inconsistent with it; but the Authority shall reserve the power and duty to enforce the provisions of this Code.

The Authority shall make such reports as the Administrator may require, periodically or as often as he may direct.

Any decision, rule, regulation, order or finding made or course of action followed pursuant to the provisions of this Code, may be cancelled or modified by the Administrator whenever he shall determine such action necessary to effectuate the provisions of Title I of the National Industrial Recovery Act.

Any interested party shall have the right of complaint to the Authority and of prompt hearing and decision thereon, under such rules and regulations as it shall prescribe, in respect of any decision, rule, regulation, order, or finding made by the Authority.

It also provided for a maximum work day of eight hours and week of 40 hours with certain expections for all sections, whereas, it had been shown by testimony at public hearing that usual hours were 60 in the South and 48 in the West.

Minimum wages were established which in some sections were four times those previously paid.

Production control was provided for with certain specific rules, as were minimum prices. The major point which it is desired to emphasize is that of the complete delegation of power to the Code Authority, (and their right to redelegate this power to their agencies) of interpreting the Code, making of rules and regulations, and enforcing them, with the reservation to NRA only, as contained in Article IV, to require reports, and in Article XII (b) to cancel or modify actions of the Authority.

Following this delegation of power the Administration did not set up any machinery by which it could be automatically apprized as to how the details of the production control plan were working. When asked for certain data by the Administration pertaining to timber ownership the industry held that it could not give out facts which had been collected from members with a pledge that they would be held confidential. The failure to register in any one place full data on the issues which arose and the way in which they were handled, created uncertainty on the part of the NRA Administration as to how the plan was working out in practice.

Judgment regarding the functioning of administrative machinery must be based mainly on indirect evidence except for the few cases subsequently recited. There are no data available which would show in a comprehensive way, on a quantitive basis, how production control affected the business of the individual operator.

It has been impossible to accurately determine the volume, or character of complaints against production control, or the manner in which decisions were reached by local authorities except for the few cases which reached the NRA Administration on appeal, and which are covered in detail later on in this chapter.

There can be no question as to the magnitude of the problems involved in this undertaking by the Lumber Code Authority of control of production.

In view of the broad field covered, with approximately 20,000 operators, a producing lumber capacity approximately four times production, a proportionately large inventory, and species or inter-divisional competition.

Any attempt to control whether by industry or Government was bound to result in some friction and inequities.

As previously stated no provision was made for keeping the Administration informed as to the Details of actions of the Code Authority on this subject and not much is known as to what happened except for the few cases following which were appealed to the Administration or called to their attention. In view of the problems involved the number of known cases are surprisingly few and it is not the intent to place undue stress on them, rather merely to report them as evidence of the troubles resulting from the kind of system the NRA and industry created.

There is no doubt that the difficulties surrounding the establishment of production control on such a far-flung industry were realized, as in all the meetings and conversations prior to this date the subject had been sufficiently discussed. So the rules as set forth in Article VIII were the result of much planning, and not an immature concept, when the industry proceeded to put them into effect.

The position of the Authority was promptly defined as outlined in Article I, as that of industry self-government, and it was early ruled by the Code Authority that the method of appeal from any action of the Code Authority should be as set forth in Article XVII, progressively to the Subdivision, Division, Authority, and then to the Administrator. In the early days of the Code all complaints and appeals reaching the Administration were forwarded to the Code Authority to answer and handle, but later were acknowledged by the Deputy Administrator, advising appellants to take their problems direct to their governing body. It can readily be seen, with the purpose of the Code Authority to (as they so often term it) "wash their dirty linens in private" and with the assent of the Deputy Administrator to this procedure, coupled with the expense and lengthy controversy of carrying a protest through to the Administrator, why so few formal complaints ever came before the NRA officially.

The foregoing background is necessary to the discussion of Article VIII of the Code entitled "Production Control."

The Assistant Administrator Dudley Cates in reporting on the Code, stated:

> "On the assumption that interindustry competitive equilibrium will be maintained, and increase in volume of sales permitting an increase of about 50 per cent over recent rates of production would be necessary to restore employment to as many persons as were occupied with lumber and timber products industries during 1929. About 65 per cent of the total lumber production is absorbed by the construction industry, therefore, sustained improvement in the lumber industry cannot be expected apart from revival of building construction."

This revival of business activities did not materialize, thus making the problems of production control even more acute.

> "There are now some 20,000 sawmills in the United States of which more than 15,000 are small enterprises whose mills are valued at less than $5,000 each. The Code as recommended contemplates their continued operation and guarantees free access to the market to new enterprises subject to the same limitations as are applicable to those already in the market."

The provisions for the granting of allotment to any person upon request and evidence of ability to operate, and the high levels of prices established held out a promise of large profits resulting in the establishment of some 95 new large mills each with annual capacity of five million feet or over and a great number of small mills variously estimated as high as five thousand in Southern Pine territory alone.

In order to prevent flooding the markets through this potential production the Authority was forced to cut down the quota to each operator for each succeeding quarter during the expiration of the Code. As an example, the Hardwood Division, which reported a great increase in new mills was able to allocate but 1,100 hours per mill for the entire year, 1934.

Assistant Administrator Dudley Cates, who conducted the public hearing on this Code, reported to the Administrator as the reasons for the inclusion of this Article: (1) "Logging and sawmill activities have continued at a low level for so protracted a period of time, and capacity is so greatly in excess of even the enlarged operations of recent months, that control of production is imperative if renewed and accentuated demoralization of the industry are to be avoided:" and (2) "the excess volume of lumber produced without regard to demand is responsible for the demoralized price and selling below cost."

The principal arguments developed at the hearing against production control were that the plan was difficult of equitable administration, that its execution would inevitably fall into the hands of large operators,

and also that without control over the erection of new mill capacity it would be extremely difficult to make such control effective. However, despite the latter argument, Article VIII, provided that each person known to be in operation was entitled to an allotment for production, and that any person desiring to operate, upon evidence of ability to so do, should be eligible to join the ranks of producers.

It will be observed that the Lumber Code is specific in its numerous production control mandates as included in Article VIII, which for the purposes of this report is quoted in part as follows:

> "The Authority shall determine, and from time to time revise, not less frequently than each three months, estimates of expected consumption including exports, of lumber and timber products of each Division and Subdivision; and based thereon it is empowered to establish, and from time to time revise, production quotas for any Division or Subdivision of the Lumber and Timber Products Industries. Allotments within each Division and Subdivision for the persons therein, shall be made, subject to the supervision of the Authority, by the agencies designated by it. Said quotas as between such Divisions, or Subdivisions shall be in proportion to the shipments of the products of each during a representative recent past period to be determined by the Authority.
>
> Each person in operation shall be entitled to an allotment. Each person known to any Division or Subdivision agency to be in operation shall be registered by such agency immediately and shall be assigned an allotment. The agency shall also immediately give public notice reasonably adapted to reach all persons operating or desiring to operate, stating the date on which the allotments will be determined; and any person desiring to operate who shall give the agency written notice of such desire ten days before the allotment date, supported by acceptible evidence of ability to operate, shall be registered by the agency and assigned an allotment. Any person so registered shall be deemed an "eligible person" for the purpose of this Article.
>
> The allotment for each eligible person shall be determined from time to time for a specified period not exceeding three (3) months and, except as anywhere permitted under the provisions of Section (d) hereof, shall be as follows:
>
> The basis for determination of Division and Subdivision quotas and of individual allotments and any revisions thereof, all quotas, all allotments, and all appeals therefrom and all decisions on appeals shall be published.
>
> Allotments from two or more Divisions or Subdivisions to the same person shall be separate and distinct and shall not be interchangeable. Allotments shall not be cumulative except as authorized in specific cases under Section (d) I of this Article, or in cases of seasonal operations of a Division of Subdivision under Section (d) (2) of this Article, and shall

not be transferable except as between operations under the same ownership within the same Division or Subdivision.

Whenever in the case of any eligible person it shall be necessary in order to accept and execute orders for report, to have an addition to his regular allotment, provision for such necessary excess shall be made by the Division or Subdivision agency, provided that any excess above his allotment shall be deducted from his subsequent allotment or allotments.

The Authority shall issue interpretations and shall promulgate rules and regulations necessary for the enforcement of this Article, to prevent evasion and secure equitable application thereof, and assign quotas to each Division and Subdivision which shall become effective on the dates specified by the Authority. Each Division and Subdivision shall assign allotments to all eligible persons effective on the dates specified by the Authority."

As quoted above, it was specifically provided that the Code Authorities should determine expected consumption and, based thereon, establish quotas. The application of this provision immediately resulted in trouble. If strict interpretation of this rule had been applied and production allotted on the basis of expected demand, the allowable production would have been so small that instead of creating employment, which was one of the main purposes of the Administration, the closing down of many mills and laying off of a great many men would have resulted.

The Code Authority chose to take a very optimistic view of conditions and increased the National quota for the fourth quarter of 1933, to 26 per cent above the estimates Timber Conservation Board for that period, and to 18 per cent above such estimates for the first quarter of 1934. The members of the industry produced roughly up to the limits allowed and, as increased demand did not materialize, a sharp increase in stocks resulted. This increase in already top-heavy stocks created an additional burden on the operators and exerted tremendous pressure on the price situation.

It must be borne in mind, however, that other forces contribute to increased production. The profits expected from the new minimum prices had much to do with the production of lumber by many operators who would not have been enticed, by production control alone, to add to their already excessive visible supply of sawmill products.

Article VIII (b) provided that allotments should not be transferable except as between operations under the same ownership within the same Division or Subdivision. It was ruled by the Code Authority that this made mandatory the transfer to any person qualifying. This right of transfer, of course, could only accrue to a large operator, owner of several plants, and the result was to permit one plant of several, to operate much longer hours than could the under sale ownership plants. This condition caused much bitterness, particularly in the Hardwood Divisions, with their multiplicity of small units, and quite a number of complaints in the other lumber divisions. The Article was finally forced before the Administration for amendment, with the NRA Advisors

maintaining that transfers of allotment redounded to the benefit of the large operators only and should not be allowed under any circumstances, and the Code Authority insisting that there were certain conditions where it should be granted. The subject was finally compromised by Amendment No. 53 which was approved by Administrative Order 9-139, providing for the transfer of allotments if the Authority should find that non-transfer would cause undue hardship, and under certain limitations, and that notice of such action with a finding of facts should be immediately forwarded to the Administration. Certain Divisions continued to transfer allotments and no reports were forthcoming to the Administrator. After a number of months of delay and repeated requests the Divisions began to send in reports as follows:

"The Division upon a finding of facts has transferred allotments as follows:"

No details as to owners and amounts, or explanation of the reasons for these transfers were given. The failure to furnish the Administration with the required information, and the failure of the Deputy Administrator to force the issue, prevented any control or supervision of the actions of the Code Authorities.

The inequity of allowing transfers of production quotas to mills under the same ownership, permitting them to concentrate production and work full time, and the difficulty experienced by the owners of only single mills who had geared up their production to two shifts and were forced, by the amount of their allocation, to reduce their operations to less than an economical single shift was shown in the case of the appeal of a lumber company in Arkansas.(*) This company, in its appeal cited the case of another company which had transferred to its operating mill the production quota of a mill which had not run since 1929, thus enabling them to operate two shifts in the one mill, whereas, the appellant was allotted only sufficient production quota to run a single shift. However, their petition to operate longer hours was denied.

The Division of Research and Planning, NRA, had for some time been attempting to investigate the operation of this production control procedure and had made specific requests for information through the Deputies' offices, but certain efforts to obtain definite information from the Code Authority in regard to the methods in establishing quotas of production used by the divisions and the application thereof, met with refusal. However, the limited study which was made of this subject, from published bulletins, leaves some doubt whether equal applications of the provisions of the Code was accorded to all operators. Not many protests were apparent in the first four months of operation of the Code, but from January 1834 on, there was evidence of greater dissatisfaction.

In the West Coast Division the very large capacity of the mills and the method of quota allocation caused great dissension and claims of preferential treatment until adjusted. At first the allotments were made on the basis of proportioning the Divisional quota among all operators according to the calculated or rated capacity of their plants, based on reported past performances of their three best years.

(*) Tschudy Lumber Company, Weona, Arkansas. Public Hearing July 3, 1934.

Because of the Division's vast capacity so greatly exceeding the quota allotted it, and the preponderance of large mills whose past record gave them the most of the quota, some of the small operators received as little as 11 hours per week operating time, whereas, the large plants were able to operate at least a part of their equipment to the maximum of 40 hours allowed by the Code.

There was further objection by the small mills on the ground that, as provided by the Code, all known operators received an allotment and were operating for the full time allowed even though they had formerly operated very intermittently, devoting the balance of their time to other business, and that this was not fair to those whose only business was lumbering.

The objections were partially met by a compromise which consisted in adding to all those receiving less than 30 hours of operating time each week, sufficient hours to equal this minimum, and deducting proportionately from those above the 30 hour level to equalize.

There were other protests from the West Coast Division regarding provision for export allotments. The beginning of this controversy dates back to the formulation of the Code. Dudley Cates, in reporting on the hearing to the Administrator, stated:

> "Certain West Coast operators urged that exports should be exempt from production control. The West Coast district ship over half of all lumber exported. These exports constituted about 16 per cent of the entire production of the West Coast district in 1929, and about 18 per cent in 1932. At least 40 per cent of all West Coast mills share in this business."

Again at the public hearing of January 9, 1934, persons vitally interested in export shipments appealed for relief from all control of production for export and a controversy as to whether or not the control of production should apply to mills, manufacturing lumber for export was carried on during practically the entire year of 1934. It also appeared that in the application of the formula provided in the Code, the West Coast Division, in order to arrive at the quota for mills which were shipping for export and for those which were shipping for export and domestic consumption, and for those shipping for domestic consumption only, took the total production quota allowed them by the Code Authority for domestic business, added thereto the expected export, consumption, and divided this total pro rata among all mills in their Division irrespective of whether they had ever shipped for export or ever intended to.(*) They claimed that to allow an export shipping mill unlimited production for export and also allow them a domestic quota commensurate with their capacity would result in their operating longer hours than adjacent mills which did not compete for export business.

(*) Mandatory under the Code

It was claimed by one of the appellants (*) that the application of this principle resulted in that company being forced to turn down large orders for lumber to be exported.

The increase in the cost of manufacture of lumber under the Code, due both to the establishment of minimum wages and maximum hours and the establishment of control of production which increased cost by cutting down volume, led to the adoption of cost protection prices which protected the producer against a loss while selling in the domestic market. These minimum prices did not generally apply in the highly competitive export field where prices were generally lower. The tendency was therefore exhibited to export a smaller amount of lumber than had been shipped during pre-code days. To stimulate export sales, which would benefit the producer by lowering his cost per unit and benefit labor through increased employment, the Authority proposed in Amendment No. 54 a variety of devices which might be adopted by the division or subdivision agency to stimulate exports. These devices, in essence, called for a reduction in quota to mills who would list themselves as export mills with the compensatory feature that such mills might be enabled to produce more lumber for export than they would have if their quotas had not been reduced.

Certain of the Advisory Boards felt that the proposal to establish, at the discretion of the administrative agency, one of several optional methods increasing exports, was contrary to NRA policy. The Lumber Code Authority took the position that due to the diverse nature of conditions faced by the various divisions and subdivisions, a certain option in method of treatment was necessary. Failure to agree on this question was responsible for non-approval of this amendment.

There is evidence that in the West Coast Division an allotment to one of the largest companies (**) was increased, not only as to their base for allotment, which was increased nearly 100 per cent, from 55,666,660 to 106,302,300 board feet, but also additional time was accorded them on their plea that the bridges which served the timber to be cut were in such condition that they would have to be replaced in a short time and therefore the timber must be cut at once or the expense of production would be greatly increased. This additional quota was ordered to be deducted from allotments to be granted the company after October 1, 1935, but the Code expired by limitation not later than June 16, 1935.

The Chairman of the Committee allowing this increased allotment was an officer of the company. Protests were made to the Divisional Code Authority, and a committee which was appointed by them recommended as follows:

> "Without going into the merits of the case we find that the West Coast Committee on Control of Production erred in granting the Crossett Western Company additional allocation which was to be returned after

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(*) Coos Bay Lumber Company

(**) Crossett Western Lumber Company

the expiration of the Industrial Recovery Act, June 16, 1935. We recommend to the West Coast Lumbermen's Association Trustees that they cancel the additional allocations as given to the Crossett Western Company."

The following motion was adopted by the Board of Directors of the West Coast Division:

"That all special lumber allocations now given manufacturers which cannot be deducted during the first and second quarters of 1935 be rescinded and that no further special lumber allocation be granted that would require deductions after June 16, 1935."

This action was overruled by the Resident Committee of the Lumber Code Authority in Washington, which, it appears, had passed upon and confirmed the action of the Division 1 Control Committee immediately after their action.

As a result of the many difficulties encountered in the administration of production control by the industry, the West Coast Division, shortly after the Schechter decision in May, 1935, went on record as being opposed to industry handling control under any new legislation, but stated that they were still convinced that it was for the good of the industry and they would submit to Government administration only of this feature.

The Red Cedar Shingle Division came in for a great number of protests by the various operators regarding the basis of allotment in their Division. Discrimination and unjust allotment were claimed. A check of the correspondence concerning this Division tends to show that the production control provisions were not adequately and equitably administered, and that certain operators were allotted production quotas much larger than others of like capacity. A preliminary check of allocation in this Division was made by the Division of Research and Planning from the published bulletins, and the following questions were raised: "Why were there such discrepancies in allotments to mills of the same size between the third and fourth quarters of 1934? Why were some mills granted up to 200 per cent more allocation for the fourth quarter of 1934, than in previous quarters? Why were such large exceptions and additions granted to certain mills for lost production in past periods?"

A check of the publications of the Northern Pine Division brought out the question as to why a producer should and did receive a quota in one quarter greater than past experience records had shown him to produce in an entire year.

There were a number of complaints about the application of the provisions of production control in the Western Pine Division where the provisions covering seasonal operations had to be applied. It was provided, in general, that if the operating records of a mill showed inability due to seasonal conditions, to operate less than nine months in a year, it should receive approval to work 48 hours per week, but if more than nine months of operation was shown then only 40 hours per

week would be approved.

In one case which was investigated, where the operator furnished his records showing operating time of less than nine months for a number of years, the petition for additional time was denied on the grounds that the mill could have worked longer but did not because it was unprofitable for them to do so. However, it was developed that another mill located on the same Lake was receiving the 48-hour allotment.

In general, investigation of all the subject matter in regard to production control shows that practically every Division was represented in the complaints.

As previously stated, the machinery set up by the Code Authority for appeals provided that they must be made in the first instance in writing or by personal appearance to the Subdivisional agency, then to the Divisional agency, then to the National Code Authority, and finally to the National Recovery Administration.

No exact record is available as to the number of complaints or appeals that were made to the Subdivisional or Divisional agencies nor as to the number of rules, regulations, or interpretations made by them in interpreting and applying the production control provisions of the Code, but in checking the records of the Code Authority reference is found to the fact that on the question of production control the administrative agencies of the Divisions issued 132 rules, regulations, and interpretations, and received 55 appeals. The Lumber Code Authority received 39 appeals, and for the period from August, 1933 to March, 1934, issued 15 major rules and interpretations on this subject. Undoubtedly there were some operators who would not or did not, after discussion with the Authority, consider it worth while to put their plea into writing or go to the expense of carrying through their appeal will never be known. There were only four appeals, under Article XVII, officially brought before the NRA against production quotas. The previously mentioned case (Crossett Western Company) was the only appeal from a lumber division. The other were from the fabricating divisions. A veneer company (*) appealed from the production quota set for it on the grounds that the quantity allowed was insufficient to enable them to take care of the orders they had on hand. It was developed that their trade was entirely that of cutting stock to order for other companies. It was held by the Code Authority that it was unfair to allow this company to take more than its share of the available business and to operate longer hours than its competitors, as those competitors would gladly take care of the surplus orders of the complainant and thus spread employment and allow all plants to operate.

In the Spring of 1935, a company(**) was cited for consistent violation of its production quota and appeared before the NRA in an unofficial attempt to settle its differences with the Code Authority.

(*) Lapeer Wood Products Company

(**) Maxwell Brothers, Chicago, Illinois

The company claimed that prior to the Code it had done approximately eight per cent of the total business of the Veneer Division under which it was classified and that any lesser amount would cause an operating loss to which it would not agree to be subjected. By this time the Administration admitted the probable illegality of production control features of the Code, and would not consent to prosecute the company. Then the Code Authority adjusted the production quota of this company to the amount demanded by it.

A company which operated a box factory (*) producing boxes for its own use, appealed on January 10, 1934, from the production quota accorded it, claiming that it was not sufficient to take care of its requirements and that if not allowed to produce sufficient boxes for its own use, it would be compelled to buy in the open market the balance required while its own plant stood idle for part of the time. It was held that there was an excessive capacity in the industry and that it would be unfair to allow labor in this plant to work full time while labor in other plants worked part time. The petition was denied.

Leaving the field of specific cases and objections, the attempts by the Code Authority to correct the maladjustments of the Code should be shown. The following amendments to Article VIII were proposed and it is worthy of note as shown by the number of proposals that sincere efforts were made to adjust the practicable working of the provisions.

LCA Amendment #11 1.
NRA Amendment #8
Approved: April 13, 1934
Signed by: Hugh S. Johnson, Administrator

This amendment provided that in the application of Article VIII (c) (2) shipments might be used in place of production. The use of shipments rather than production as a base for determining production quotas was to be discretionary with the division and subdivision agencies. The Lumber Code Authority in presenting this amendment said that it believed that certain cases showed the use of shipments as a base might be more fair, because in certain cases the use of past production as a base might give undue weight to the firm who during the past years produced at full capacity regardless of market conditions.

1/ Transcript of hearing, January 22, 1934, pp. 1242-1245, Vol.II on Amend. #8

(*) Dupont de Nemours. Public Hearing of January 9, 1934

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1/ Transcript of hearing, January 22, 1934, pp. 1242-1245, Vol. II on Amend. #8.

LCA Amendment #12 1/
Not approved.

This amendment had to do with the transfer of allotments. It was withdrawn by the Lumber Code Authority and resubmitted as Amendment #53.

1/ Transcript of hearing, January 22, 1934, pp. 1245-1255.

LCA Amendment #15 1/
NRA Amendment #8
Approved: April 13, 1934
Signed by: Hugh S. Johnson, Administrator

This amendment provides that quotas of imports or production established by the Mahogany Division and allotments thereof to eligible persons, may be made for a period greater than three months, may be based on shipments, and shall not preclude any person from maintaining an inventory equal in footage to his previous year's shipments.

The provision for regulation of shipments of imports rather than regulation of sawing, is due to the fact that while no mahogany is grown in this country, some persons import the logs and cut them themselves, while others import sawn mahogany lumber. To establish effective control, it was therefore necessary to place the limitation on imports. The provision for the setting up of quotas for a period of greater than three months is occasioned by the method of production of mahogany timber. The timber, cut in tropical lands, is floated to the ocean during flood time. The tropical operators usually do not have enough money to finance their operations for a year's time, i.e., the time between flood periods, and it is the habit of the American importers to enter into contracts with the tropical operators a year in advance of delivery. In order to make such contracts, the Mahogany Subdivision felt it necessary that production quotas be given for a period of approximately one year. Another unusual feature of this industry is the fact that unusually large inventories are necessary. This is occasioned by the fact that many sizes and thicknesses of mahogany lumber must be carried in stock. In order that new members of the industry who did not have large inventories should not be handicapped, the provision was written in providing for an inventory at least equal to the volume of shipments for the preceding year.

It is not possible to say how this provision worked in practice. A year's time was scarcely a sufficient test. It should be mentioned, however, that production control was being evaded by many importers who were bringing stocks in this country with impunity, and the mahogany Subdivision was, during the last few months of code activity, considering various methods by which such importation could be stopped. 2/

1/ Transcript of hearing, January 22, 1934, pp. 1253-1229, Vol.II on Amend. #8, Code Record Section

2/ Files of Ass't Dep. Adm. J. C. Wickliffe on Mahogany Division.

LCA Amendment #16 1/
NRA Amendment #6
Approved: April 13, 1934
Signed by: Hugh S. Johnson, Administrator

This amendment empowered the Executive Committee of the Philippine Mahogany Subdivision, with the approval of the Lumber Code Authority, to establish maximum import allotments on Philippine Mahogany. The amendment provides that only eligible persons, those who had registered with the subdivision agency the name of the Philippine mill from which exports were to be made, might import Philippine mahogany lumber. The quotas assigned were not based upon past performances of the importer but were based upon the productive capacity of the mills from which they intended to import their products. Thus this particular scheme of limitation of importation was not subject to the criticism so often made against control of production under the Lumber Code, i.e., that it tended to freeze the industry's distribution as of the date production control, for the Philippine mahogany scheme permitted a change in the relative size of import quotas assigned to the various distributors by the simple device of a distributor gaining for himself the right to sell the products of another Philippine mill.

The limitation of imports of Philippine mahogany was necessary to prevent that wood from gaining ground at the expense of other hardwoods which were subject to production control. The provision also had the advantage of preventing an over supply of mahogany coming into this country with the demoralization of price which would be its consequence.

1/ Transcript of hearing, January 22, 1934, pp. 1147-1159, Vol.II on Amend. #8, Code Record Section.

LCA AMENDMENTS #17, 18, 19 and 21 1/
NRA Amendment #8
Approved: April 13, 1934
Signed by: Hugh S. Johnson, Administrator

These amendments provided that in the Northern Hardwood Subdisision, the Northeastern Hardwood Subdivision, the Northern Hemlock Division, and the Northeastern Softwood Division, quotas of production and allotments thereof to eligible persons might, in the discretion of the administrative agency and with the approval of the Lumber Code Authority, be for periods of greater than three months.

Amendment #17 also amended Article VIII (a) to permit the setting up of production quotas for longer than the three months period provided in the original code.

These amendments were designed to take care of a difficulty arising in the above-named divisions and subdivisions due to the fact that many of the operators were engaged in seasonal operations. The locations of these divisions and subdivisions is in the northern part of this country where it has long been the practice to fell timber from early fall until heavy snow comes and then to transport the timber to the mill on sleds. The operations are usually some distance back in the woods. It is there-

fore necessary to set up a logging camp and furnish supplies and equipment for the season. The making of such arrangements was of course difficult as long as it was impossible to know what quota would be assigned to a given firm for the whole year.

As a result of these amendments, quotas were thereafter assigned over such a period as would permit the seasonal operator to know what he would be allowed to cut during the winter season, and to enable him to plan for his camp and operations without the necessity of making further changes.

1/ Transcript of hearing, January 22, 1934, pp. 1194-1207, Vol.II on Amend. #8, Code Record Section.

LCA Amendment #35 1/
Not approved.

This amendment concerning regulations for export allotments was withdrawn by the Lumber Code Authority and amendment #54 was submitted in its place.

1/ Files of Assistant Deputy Administrator H. M. Meloney, on Amendment #35.

LCA Amendment #50 1/
Not approved.

This amendment was designed to give the Code Authority power to withhold production allotments from persons who violated Article IV of the code, either through failure to make reports or to pay code fees.

At the hearing a representative of 411 small southern sawmills protested strongly against this proposal, stating that these small mills were unable to furnish the reports asked for by the Lumber Code Authority and its agencies. The amendment was not approved, partly because of the feeling that it was not altogether fair to the small operator, and partly because, at that time, the Administration began approving amendments to codes providing for supposedly compulsory collection of code fees.

1/ Transport of hearing, March 27, 1934, pp. 33-92, files of Assistant Deputy Administrator H. M. Meloney, on Amendment #50.

LCA Amendment #51 1/
Not approved.

This amendment proposed to give power to the Lumber Code Authority in cases where a portion of the lumber under the jurisdiction of any division or subdivision was imported, to fix production quotas on the basis of imports. This amendment was strongly endorsed by the Northeastern Lumber Manufacturers Association which stated that the effect of production control in their territory with the consequent decline in domestic production, was merely to raise the amount of lumber which was imported. The representatives of the Association argued that the

measure would not be unfair to importers for it would only put them on the same basis as domestic producers.

No opposition to this amendment was shown at the public hearing but the Legal Division refused to approve it and on August 21, the Lumber Code Authority requested that no further action be taken on it for the present. 2/

1/ Transcript of hearing, March 27, 1934, pp. 93-116
2/ Files of Assistant Deputy Administrator H. M. Delaney on Amendment #51.

LCA Amendment #52 1/
NRA Amendment #11
Approved: June 5, 1934
Signed by: Hugh S. Johnson, Administrator

This amendment provides that the Lumber Code Authority may, after having been requested by a division or subdivision agency by vote of 2/3 of its members, authorize the allotment of production therein on a basis of hours of operation.

The idea of this amendment is sound. In certain divisions and subdivisions, either due to the fact that no strong trade associations were built up, or due to the nature of the operations, there were not available records of past performance sufficiently accurate to enable the allocation of production on past performance. This was particularly true in divisions where there were a predominant number of small operators. Also in certain cases the result of application of the formulae originally contained in Article VIII would be to give certain persons such a small quota that it was hardly worth while running. The advantage of allocation on an allowable number of hours basis is that it treats everyone alike and will, generally, give sufficient number of hours of operation to give labor fairly decent employment.

1/ Transcript of hearing, March 27, 1934, pp. 116-126, Vol. II on Amendment #11, Code Record Section.

LCA Amendment #53 1/
NRA Amendment #23
Approved: October 6, 1934
Signed by: G. A. Lynch, Administrative Officer

Article VIII (g) of the code permitted the transfer of allotments "between operations under the same ownership within the same division or subdivision," qualified only by the provisions of Section C which required "acceptable evidence of ability to operate." This provision for the transfer of allotment quotas was taken advantage of by (1) purchasing of mills which would probably never run again so that their allotment quotas might be transferred, (2) transfer of allotment quotas from mills which had no available timber resources and (3) by transfer of allotment to an area where the minimum wage was lower.

In order to avoid these difficulties, the amendment proposed by the Lumber Code Authority stated in essence (1) that no transfer should be allowed from a mill which had not been operated in good faith for six months after its acquisition, if such acquisition was after the effective date of the code; (2) no transfer could be made from one mill to another unless the species produced were ordinarily the same; (3) no transfers could be allowed to any mill, the greater part of whose products could, under the provisions of Article IV (d) of the code be sold at less than minimum cost protection prices, and (4) no transfer should be allowed unless it appeared that such transfer would make for greater efficiency and economy of operation.

The Consumers' Advisory Board recommended disapproval of this amendment because it felt the ability to transfer allotments between two mills under the same management gave an unfair advantage to the large operator over the small individual mill owner.

The desirability of some method of check on transfers of allotments, however, caused favorable action on this amendment by the Administration.

1/ Transcript of hearing, March 27, 1934, pp. 126-144, Vol. II on Amendment #23, Code Record Section.

LCA Amendment #54 1/
Not approved. (Previously referred to in this report pertaining to Export Control.)

The increase in the cost of manufacture of lumber under the Code, due both to the establishment of minimum wages and maximum hours and the establishment of control of production which increased cost by cutting down volume, led to the adoption of cost protection prices which protected the producer against a loss while selling in the domestic market. These minimum prices did not generally apply in the highly competitive export field where prices were generally lower. The tendency was therefore exhibited to export a smaller amount of lumber than had been shipped during pre-code days. To stimulate sales, which would benefit the producer by lowering his cost per unit and benefit labor through increased employment, the Authority proposed in Amendment #54 a variety of devices which might be adopted by the division or subdivision agency to stimulate exports. These devices, in essence, called for a reduction in quota to mills who would list themselves as export mills with the compensatory feature that such mills might be enabled to produce more lumber for export than they would have if their quotas had not been so reduced.

Certain of the Advisory Boards felt that the proposal to establish, at the discretion of the administrative agency, one of several optional methods increasing exports, was contrary to NRA policy. The Lumber Code Authority took the position that due to the diverse nature of conditions faced by the various divisions and subdivisions, a certain option in method of treatment was necessary. Failure to agree on this question was responsible for non-approval of this amendment.

1/ Transcript of hearing, March 27, 1934, pp. 144-153. Files of Assistant Deputy Administrator H. M. Meloney on Amendment #54.

LCA Amendment #55 1/
Not approved.

This amendment, declaring that the productive capacity of the industry was far larger than warranted by current needs, proposed that, until the Administrator found that additional capacity was necessary, no new mills be created and no existing productive facilities be enlarged. The Authority proposed this amendment for the following reasons:

1. That whereas in 1929, 69 per cent of the productive capacity of the industry was being utilized, in the first quarter of 1933, this use of productive capacity had shrunk to 19 per cent.

2. Control of production which made mandatory the granting of an allotment to every mill capable of production had resulted in the springing up of several thousand new mills, particularly in the South. These mills were granted quotas with a consequent reduction in the size of the quotas given to already existing mills. This process being continued, would result in slicing thinner and thinner the amount of business which could be given to any mill during a given period with the result that costs would be highly increased and competitive products would take the place of lumber products.

The amendment proposed that mills might be transferred from one site to another when their timber was cut out and also proposed that the administrative agency might, in exceptional cases, authorize the building of new productive machinery when such building was necessary to cut mature timber which might otherwise be lost.

The adoption of this amendment was strenuously opposed from many quarters. The Administration felt that it not only granted too much discretion to the administrative agencies, but that, it was unconstitutional as constituting a deprivation of property without due process of law.

1/ Transcript of hearing, March 27, 1934, pp. 153-270. Files of Assistant Deputy H. M. Meloney on Amendment #55.

For a considerable number of years about 25 per cent of the red cedar shingles consumed in the United States had been imported from Canada. In 1932 the rate of exchange then existing caused the proportion of Canadian imports to rise to 35 per cent; and the 25 per cent ratio was again exceeded during the early part of the Code period.

In the administration of production control the Code Authority had to meet the problem of restricting domestic production of a product where a portion of the supply was imported.

Although the workers in the Canadian shingle industry was endeavoring

to advance wages and the industry to advance prices in line with advances in the United States under the Code, it was agreed by representatives of the industry on both sides of the border that it would be impossible to control production and prices for any length of time unless there was developed some control over the quantity of Canadian imports. Section 3 (e) of Title I of the National Industrial Recovery Act authorized the President, in case competitive goods were imported into the United States in substantial quanitites, or in increasing ratio to domestic production, in such manner as to endanger the maintenance of a Code, to authorize an investigation to be made by the United States Tariff Commission, and, following the completion of such investigation, to limit the quantity of such goods which might be imported into the United States, or otherwise determine the conditions under which entry would be permitted.

In response to the President's direction, the Tariff Commission made an investigation of the red cedar shingle problem and recommended that the quantity of shingles which could be imported be restricted to 25 per cent of domestic consumption, either through cooperation with the Canadian Government or by Executive Order. The problem was settled by the Canadian and American manufacturers, aided by the Departments of State of the two countries, coming to a voluntary agreement on a 25 per cent limitation, so that it was not necessary for the American Government actually to exercise the authority given it under the National Industrial Recovery Act. As a means of applying necessary control, the Canadian producers had first formed an organization for this purpose.

In 1935 the production program for the Red Cedar Shingle Industry was upset by a strike which lasted from May to September. Under these circumstances, it would have been impossible to supply the markets in the United States on the basis of the quotas set up under the Lumber Code. In order to permit increased importation of Canadian shingles, both in absolute quantities and in proportion to total consumption, the entire red cedar shingle quota was increased. As American producers were unable to meet their quotas, this in effect increased the percentage allotted to Canada.

It was expected that the administrative machinery set up under the Code for the Red Cedar Shingle Industry would disappear at the end of the Code period but it has not. The American producers have retained their organizations and apparently have some gentleman's agreement with Canadian producers, with the tacit support of the United States Department of State. To determine exactly how matters have worked out since the Code period ended, field contacts would be necessary which have not yet been possible.

Although mahogany is not produced in this country, imports of this wood were restricted under the Code. Some firms that had imported mahogany irregularly, and had not imported in the three years prior to the codes which was the basis of determination of quota, did not receive quotas and could not make imports.

The by-laws of the various associations, which became administrative

agencies under the Code, were amended so that all members of the industry could gain easy entrance to association membership, and to establish equality in voting power. Three specific exceptions are noted in such by-laws. The first is that of the Northern Pine Division, whose by-laws provided that voting was to be on the basis of one vote for each one million feet of productive capacity or fraction thereof, with no one member receiving more than 15 votes. A preliminary check of the production quotas established for this Division during the year 1934, showed that some producers received allotments for one quarter that were larger than their records had shown them able to produce in an entire year.

The Mahogany Subdivision by-laws carried a provision that voting should be on the basis of one vote for each $100 dues paid. No importer was limited to the amount of dues that he could pay, and consequently not limited to the number of votes he could receive. No check has been possible on the allocations of this Division, due to the difficulties mentioned above.

The Philippine Mahogany Subdivision by-laws contained a clause permitting votes on the basis of "each 100,000 feet of allotment." Due to the fact that there was a complainant who appealed to the Administration the Division of Research and Planning was enabled to obtain the allotment records and found that six producers received allotments equivalent to 51 per cent of the total for the Division. These six producers, according to the by-laws controlled all future quotas and could keep themselves in power as long as they wished or until amendment of the by-laws. In the case mentioned, arrangements were made to satisfy the appellant.

It might be well to note that one of the results of production control as administered under the Code was the encouragement of selective sawing -- bringing out of the forest only the best part of the tree. With restrictions only on the quantity of sawn lumber produced the aim of the manufacturer must be, of course, to get the highest return from this quota. The production control provisions limited sawn lumber and not logging, and therefore increased waste in the forest by encouraging the practice of leaving on the ground to decay all but the best logs from the trees.

The National Industrial Recovery Board recognized certain conditions as inevitable in any attempt at control of production, and in a publication dated April 23, 1935, entitled "Administrative Policy," stated in part as follows:

> "A control of production is inevitable under any industrial system. A long experience has led us to leave that problem to the open market. In a few industries in which competition has proved unusually disorderly, it may be necessary to intervene to bring production into line with demand; but such intervention should avoid 'restriction of output' and should aim at the kind of equation between production and consumption as the market is supposed to effect. The strategy of policy must find expression in a multitude of decisions. But its

end is single -- an economy, not of scarcity but of plenty. In other words, means and ends must not be confused. Means should be flexible, requiring the use of a miscellany of devices and procedures. Objectives should be stable. The goal is the establishment of conditions under which in a free and open market competition may determine a fair price."

Production control will remain a problem of this industry, and methods to solve it will continue to be offered as long as the presently existing tremendous potential capacity to produce goes hand-in-hand with a much restricted consumer demand for lumber and timber products.

CHAPTER IV

PROBLEMS OF DISTRIBUTION

The successful marketing of forest products is as important as the unquestioned need for aggressive and farsighted action in maintaining the growth and protection of timber stands. This axiom is well substantiated by the fact "that had the per capita lumber consumption from 1899 to 1909 continued, the 1929 gross consumption would have been almost twice what it was.....for while consumption of all other major building material was greatly increased, gross lumber consumption actually decreased or barely held its own. (*)

The intimate relationship of the growth and distribution of forest products to (a) land use, (b) employment, (c) government investments, is a challenge to the industry and to the consuming public to put forth every effort to retain, to recapture, and to expand the market for forest products.

Patently, the attainment of these objectives is a problem of industrial efficiency centering chiefly around (a) production, (b) price, (c) channels of distribution, (d) transportation, (e) increased satisfaction in the use of the products, (f) competitive practices and (g) integration of industry.

Not the least of these intimate factors is that having to do with the improvement of the products which may be accomplished in various ways, some of which are:

1. By controlling moisture content through better seasoning

2. By exercising greater care in selection and grading, and

3. By making decay-resistant lumber generally available.

Sight should not be lost of the fact that low production cost, and not so incidentally either a higher degree of satisfaction to the consumer, calls for radical changes in industry organization and in practices re forest holdings.

While there are of course various disadvantages controlling the cost of lumber (lumber is the principal forest product and presents the most difficult marketing problem), possibly the most dominant is the heavy transportation charge. Lessened transportation costs will depend on at least three conditions: (1) freight rate adjustment, (2) decreased cross-hauling, (3) putting those forest areas closest to consumers into maximum production, and (4) fabrication of lumber at the source rather than at the point of consumption.

Few people realized how intimately and extensively wood, as wood, enters into our every day requirements. Fewer still are aware of the fact that an ever increasing quantity of wood is used in making articles in which the identity of the wood is not obvious. There are, for example, thanks to laboratory and chenical treatment, products such as paper, rayon, cellophane, artificial leather, paper dishes, drinking cups, roof-

(*) "A National Plan for American Forestry." A report of the Forest Service (1933) p. 1365.

ing felt, and even conduit pipes, all made from wood. Then there are wood extracts, dye stuffs, essential oils and naval stores, each one creating a demand and its consonant problem in distribution.

In the past, lumber and the other major forest products have "sold themselves." Quite the contrary is true now, for those commodities must be pushed against the increasingly keen competition of other materials. There is important need, therefore, for strong promotional effort not only to maintain established outlets but to generate latent wants, all of which calls for distributor cooperation in a well coordinated sales policy to the end that the consumer may obtain material of the type and quality desired to meet his particular requirements.

Turning to the more specific discussion of distribution problems as such it is to be noted that there are as many and as wide variations of marketing methods as there are sections and regions of the country. This may well be accounted for by the fact that the industry took its beginning largely from agriculture with its early market of new farms caused out of the ever receding wilderness and the methods which grew up during this period have been carried on through the transition period to the present. Any attempt to define specifically methods of distribution would be entirely erroneous except for the section or region specifically under discussion, therefore, this portion of the subject will only be touched on in a broad way.

The entire distribution mechanism is governed by specific demand factors. While these factors are legion, if individual purchasers are considered, there are actually but few variant factors if purchasers are reduced to major consumer groups. The Construction Industry comprises by far the most important of these groups, followed by the Wooden Container Industry, and many other lesser industries - all discussed in some detail in subsequent pages.

In order that the reader may have some sort of a yardstick by which to measure the Lumber Industry's field of distribution and thus more intelligently comprehend its demand factors and distribution problems, the following observations and data are presented.

As already stated, although lumber is but one of the many products of the forest, it is by far the most important, since the saw timber area consists of approximately five-sixths of the total commercial area. With the shifting of the industry, as each new area was tapped, production and origin of shipment naturally shifted and correlatively influenced the distribution problem.

In the beginning, timber and other forest products were located under favorable conditions adjacent to their markets, making for low production and distribution costs. But as these supplies of virgin timber were depleted, new areas were opened up farther and farther from the market, thus increasing transportation costs which were passed on to the consumer in increased prices. The inevitable result was lessened demand.

Going back a step further into the field of production, it is evident that these recurring shifts and consequent results generated a dilemma on the horns of which the industry was and still is securely caught. To

make a profit it has always had to either increase prices and face a diminishing demand, occasioned in part by consumer demand for substitutes, or reduce cost in an effort to maintain and expand markets.

Bearing in mind that the principal softwood producing regions are Southern pine in the Southeastern section of the United States; the Douglas Fir region comprised of most of the States of Washington and Oregon; and the Western Pine region comprised of the inter-mountain states, it can be readily seen with the principal consuming markets on the Northeastern Seaboard, in the central west and in California, that there would be a very considerable cross-haul of lumber and timber products to effect the distribution of the manufactured products to the consuming areas. This movement of lumber and timber, is very completely shown in Table XLII, Appendix II, of this report which deals only with the softwoods, but as softwoods make up from 85 to 90 per cent of the total annual consumption of lumber and timber products, this data is indicative of the whole field.

Certain summary figures from this complete table are presented in tabulation on the following page.

Wherever the manufacture of lumber has been a major undertaking the first mills were usually situated along waterways and the logs were rafted to them but as the timber adjacent to the water was depleted, the mills moved inland and resorted to rail and other transportation agencies to reach the consuming areas. About the only rafting now done of logs is along the Pacific Coast from the northwest to mills in that area and in California.

When most of the production of lumber was confined to the northeastern states, a large amount of it moved through the various canals. In 1872 a total of 1,467,865 tons of forest products moved into the Hudson River from the Erie and Champlain Canals. From this peak year, canal tonnage declined to 232,625 tons in 1907.(*)

Lake and all-rail shipments of lumber from Saginaw River points in 1885 amounted to about 149,000,000 ft. by rail and slightly over 659,000,000 ft. by water. Rail shipments increased steadily until in 1897 they amounted to 370,000,000 ft. as against slightly over 89,000,000 ft. by water. Water shipments of lumber into Chicago reached their peak in 1882, amounting to 1,850,000,000 feet, but have dropped to 175,000,000 by 1914. In 1871, 81 per cent of the lumber reaching Chicago came by water whereas in 1913, such movement was less than 9 per cent.

As the areas of production shifted to the South, coastwise movement from the South Atlantic ports by sailing and steam vessels became of increasing importance. The annual report of the New York Chamber of Commerce for 1890-91 contains a table showing that 1,301,358,762 ft. of lumber were received at the port of New York in 1890. Of this amount, 304,823,000 ft. were delivered by rail and 996,534,762 ft. by water. In

(*) Canal data taken from "Report on Transportation by water in the United States," by the U. S. Commissioner of Corporations, July 19, 1909, Part, 2.

SHIPMENTS OF PRINCIPAL SOFTWOOD SPECIES TO PRINCIPAL REGIONAL DESTINATIONS

(illion Feet B. M.)

Regional Destination	1929 W.P.	1929 Y.P.	1929 D.F.	1932 W.P.	1932 Y.P.	1932 D.F.	1933 W.P.	1933 Y.P.	1933 D.F.	1934 W.P.	1934 Y.P.	1934 D.F.
Grand Total a/	4,972	10,499	3,456	2,434	3,369	3,010	2,600	4,105	4,142	2,714	4,215	3,324
North Atlantic	167	384	311	84	97	173	93	90	226	84	93	199
Middle Atlantic	681	2,311	1,452	340	695	536	341	632	659	327	643	626
Northeast	30	2,999	83	15	996	53	17	899	75	23	993	70
Lake States	302	2,321	1,374	400	665	437	522	1,117	619	514	1,147	451
Mid-Western	501	507	1,212	250	195	403	330	320	620	230	329	461
Southwestern	77	1,974	389	39	715	37	46	1,043	36	45	1,071	67
Intermountain	725	2	621	362	4	242	371	2	433	442	3	319
Pacific Coast	1,990	1	3,069	994	1	1,119	681	1	1,419	999	1	1,081

Source: Compiled from Table XLII of this report.

W.P. All softwood lumber produced in Western Pine Division
Y.P. " " " " " Southern " "
D.F. " " " " " West Coast "

a/ Estimated total shipments per year published in Docket No. 5 National Control Committee Meeting of Lumber Code Authority, March, 1935, less exports as published by Foreign Commerce and Navigation.

1907, 447,229,565 ft. of Southern Pine were received at New York by water and of this amount 224,433,208 were discharged from sailing vessels, the remainder from steam vessels.

Prior to 1900, and to an ever-decreasing extent following the turn of the century, a considerable amount of the water-borne lumber which entered the North Atlantic ports from Baltimore north was shipped by rail to interior points as far west as Cleveland. Much of the lumber which was back-hauled was remanufactured in plants located in the North Atlantic ports. However, as manufacturing facilities were increased at the mills, and as the network of railroads spread out throughout the South and West this movement of lumber inland from the Atlantic Seaboard ports has very materially decreased.

In the early 1920's the movement of Pacific Coast woods to the Atlantic Seaboard ports began to gain impetus. In 1920, 205,000 short tons of lumber passed through the Panama Canal; in 1922 this had increased to 1,122,000,000 short tons.

This water-borne movement from the Pacific to the Atlantic of low-grade lumber at low freight rates was a blow to the producers of Southern Pine. Although wages in the mills on the West Coast were two or more times higher than they were in the southern mills, the efficiency of labor, the class of timber, and the facilities for manufacturing lumber on the West Coast were such that it could be shipped 6,000 miles by water and yet compete in price with lumber of other areas shipped by rail from 300 to 1,500 miles to the metropolitan centers. Further, it could be back-hauled by rail 400 or 500 miles from the Atlantic Coast and still compete with Southern Pine, shipped to such points as Youngstown and Cleveland, Ohio.

Within the last few years there has been a movement by truck from the mill to the consumer. This trend was to be expected in remote districts; it has, however, been highly developed, particularly along the Eastern Seaboard, and much lumber is now hauled from Virginia and the Carolinas into such cities as Washington, Baltimore and Philadelphia. In many instances the lumber hauled by truck is sold direct by the mill to a contractor or a builder, and delivery is often made over night.

This method of transportation has materially added to the burden of and increased the competition of the retailer in certain areas. It has further served to break down general price levels. A contractor buying direct from a mill at a cheaper price than a retailer exerts pressure on the retail yard to meet the competition of the mill, and this pressure is, in turn, exerted by the retailer on his sources of supply.

Although there are no figures available to confirm definite changes in the method of distribution under the Code it is believed that much of the growth of truck transportation was due to the Code. Certainly it cannot be denied that many purchasers of lumber exerted themselves to the full in an endeavor to break down not only the Code prices set up by the manufacturers but also to evade, if possible, the modal mark-up of the retailers. It is also an undisputed fact that some shippers and

wholesalers of lumber cooperated with this class of purchasers. During the Code period, the majority of retail lumber dealers not wishing to increase their low stocks were most desirous of buying in small quantities, less than carload lots. This reason, together with the fact that low stocks were replenished more rapidly by truck deliveries than by rail shipments often led to truck transportation. The great increase in number of good roads and in the efficiency of trucks has also contributed to this method of distribution.

With the expansion of the west, particularly upon the completion of the transcontinental railroad, came considerable increase in farms. During this period there were approximately 60,000 farms established annually, each taking many thousands of feet of lumber. This building reached its high point in 1906 and 1907, when 46,000,000,000 board feet annually were consumed, inciting wild stumpage speculation. With the continuation of agricultural expansion and its concurrent increased demand for lumber, the value of stumpage rose steadily to about 1927. This speculation and acquisition in the West, of large timber holdings, is the key to many of the problems which appeared during the years of the depression.

With the declining demand and the resultant decline in value of stumpage, timber holding became a liability due to the tax problem For example, a study in northern Michigan shows that on 16 representative timber tracks, average annual taxes per acre increased from 14 cents in 1906 to 96 cents between 1926 and 1930. As with all other products, when stumpage values were no longer increasing, the tendency was to liquidate holdings. This in turn brought keener competition and a desire to convert standing timber into cash. New mills were constructed at a rapid rate. From 1921 to 1929 the number of establishments producing more than $5,000 annually grew from 14,961 to 19,142 -- this in spite of the fact that the volume of lumber consumed was steadily declining. The pressure to liquidate timber became even greater during the depression years, although practically all holders of timber land realized that there was already large over-production.

Until about 1923 the generally increasing lumber prices were accepted by the public, then the competition of substitute materials became acute, with the result that profitable lumber prices could no longer be maintained under the current regime. Literally forced to the wall by the two battering rams of mounting costs and relentless competition, the industry in desperation resorted to lower cost formulas and improved methods of grading and seasoning to make its products more attractive to the consumer. What little advantage was gained in this manner, however, was frequently offset by new concerns entering the production field, particularly in the older areas, where a second growth, though immature, was put on the market, and by old concerns setting up an already sufficient capacity. Overproduction would inevitably follow with a resultant drop in prices, thus forcing the high-cost operators to close down until curtailed production and increased prices again permitted them to compete.

As already stated, although lumber is but one of the many produc , of the forest, it is by far the most important. Some graphic idea of the general demand factor of at least the major forest products may be

gained from the following table of forest products and the per cent of demand in terms of the total amount used annually from 1925 to 1929:

FOREST PRODUCTS	PER CENT OF TOTAL USED ANNUALLY
Lumber	50.8
Fuelwood	27.6
Hewed ties	4.4
Fence posts	4.3
Pulpwood	4.1
Mine timber (round)	1.6
Veneer logs	1.6
Cooperage (slack)	1.1
Logs and bolts in manufacture	1.1
Cooperage (light)	1.0
Shingles	0.9
Miscellaneous (poles, piling, export, logs, distillation and extract wood, excelsior, etc.)	1.5

Source: Bureau of the Census, 1925-1929.

Through its years of development and vicissitude, the industry has had to cope with a sluffing away of same and the growth of new demand factors. Just what future demands may be is pure conjecture. The conviction is growing, however, that our forests will be required to furnish material for many derived products such as cellulose, lignin and acetate of lime, rather than chiefly logs, lumber and cordwood as in the past. Whatever the demand, though, the pioneers' attitude of destruction is being replaced with an attitude of care and conservation.

It is quite evident that the brevity of this chapter does not permit even a passing discussion of the lesser manifold uses and the germane factors entering into their individual collective distribution. It will suffice to devote consideration merely to those major demand factors or consumer groups, which have dominated and still control the consumption of the Lumber Industry's chief products.

The consumption of lumber may be roughly divided into five general demand divisions. They are:

1. Lumber used for construction purposes
2. Wooden containers
3. Industrial use
4. Railroads, including ties and other structural lumber for railroad purposes
5. The export market

It is difficult to obtain data as to the proportion of the total consumption going into each class enumerated above. The Department of Commerce, however, in conjunction with the United States Forest Service, made such a division, and found that in 1928 approximately 63 per cent of the total lumber used was for construction purposes, including the lumber that had been fabricated into construction parts, such as doors, sash, etc. This included all railroad lumber except that used for car construction, which was placed in the industrial classification. Approximately 16 per cent went to the Wooden Container Industry in 1928; and about 14.5 per cent to the lesser industrial uses; with 6.5 per cent to exports.(*)

In 1933 the Construction Industry took about 66 per cent, the Wooden Container Industry 16.4 per cent, other industrial users 12.5 per cent, and 5.1 per cent was exported. It is thus seen that the Lumber Industry is pretty definitely wedded to the Construction Industry, for better or for worse. Correlatively, large centers of population furnished the most enticing consuming areas.

The total lumber consumed in the early part of the 20th Century exceeded even that used during the building boom period of the late 20's. This, to some extent, was due to the enormous amount of railroad building at the turn of the century, together with new towns and farms opened up along their right-of-way.

According to the National Lumber Manufacturers Association, production in 1906 and 1907 surpassed 45,000,000,000 feet. The nearest approach to this figure was in 1923 and 1925, when slightly in excess of 41,000,000,000 feet of production was reported. Lumber, though used for fewer purposes during this period to 1907, was used in greater quantities than at any time since. The railroads for example then used enormous quantities for ties and trestles; some of the latter have since been replaced with concrete and steel and perfected methods of treatment have reduced decay and replacement. The plank sidewalks, and these took a lot of lumber, were common, and green lumber houses sprang up like mushrooms.

The United States Census reports for the decade 1920 to 1930 showed construction of 4,500,000 buildings with a dollar value of such construction amounting into tremendous dollar investment as seen from the following table:

YEAR	VALUE, BUILDING CONSTRUCTION
1920	$4,133,000,000
1921	3,786,000,000
1922	5,302,000,000
1923	5,829,000,000
1924	6,421,000,000
1925	8,036,000,000
1926	8,163,000,000
1927	7,975,000,000
1928	8,237,000,000
1929	7,234,000,000
1930	5,062,000,000 (**)

(*) See Table XXXI, Appendix to this Report

(**) See "The Construction Industry and NRA Construction Codes," Division of Review, NRA, March, 1936.

The use of lumber follows the general trend in construction as shown by the following index comparisons of building volume with total volume of lumber shipped:

Year	Construction	Lumber Shipped
1920	50.5	79.5
1921	45.2	77.9
1922	65.1	88.0
1923	71.5	101.4
1924	79.0	98.2
1925	98.8	104.3
1926	100.0	100.0
1927	89.0	92.3
1928	100.5	102.4
1929	89.0	97.2
1930	62.0	69.2
1931	39.5	50.9
1932	17.3	37.4
1933	16.4	43.7
1934	20.7	40.6

While it is apparent that the volume of lumber used during the boom years of the late 20's as shown in Appendix II, of this report, Table XXXIII did not parallel the total increase in construction, there has been less disparity than is generally thought. The comparison shows that for every $1,000 worth of construction, there was 4,520 feet of lumber used in 1920, 2,796 feet in 1925, the lowest point being in 1927, when 2,470 feet were used. There was an increase in 1929 to 2,861 feet, with the highest point in the 15 years reached in 1933, with 5,768 feet. This may have been due in part to the large number of C.C.C. camps built in that year as compared to total construction, but this has not been accurately determined. In 1934 some 4,523 feet of lumber were used for each $1,000 of construction.

In 1928 a total of 23,822,230,000 board feet of domestic lumber went into construction, as compared with 10,162,661,000 board feet in 1933, or a drop of more than 50 per cent for the period. Softwood accounted for about 91 per cent of the total softwood and hardwood consumed by the Construction Industry in 1928, and for about 87 per cent in 1933. It is seen, therefore, that softwood consumption has lost somewhat to hardwood consumption, although the cause is not definitely discernible.

Of the total lumber consumed by the Construction Industry in 1928, by far the largest amount, or more than 31 per cent of the softwood was taken by New York State. Illinois ranked next, taking nearly one-third as much as New York, followed by California, Pennsylvania, Michigan, and Ohio, in the order named. Considerably lesser amounts were taken by the remaining States. New York likewise took the largest proportion of the hardwood production in 1928, or about 31 per cent, followed by Illinois, California, Pennsylvania, Michigan, and Ohio, in order.

In 1933, five years later, New York still outranked all other States

in its total consumption of both softwood and hardwood, but the percentage difference between its take and that of California, the next ranking consumer, was slight. New York took 23 per cent of the total softwood production, whereas California took 21 per cent, New York, 23 per cent of hardwood production, and California, 21 per cent. Illinois, which held second place in both softwood and hardwood in 1928, dropped to fifth place in 1933. Pennsylvania moved up from fourth to third place, Ohio from sixth to fourth place, and Michigan dropped to sixth place.

Comparisons of State consumption are even more significant when studied in relation to the total amounts consumed in the two years.

CONSUMPTION OF LUMBER BY THE CONSTRUCTION INDUSTRY

(M. Feet B. M.)

WOOD AND STATE	1928	1933
Softwood:		
Total	21,634,717	8,869,570
New York	6,838,518	2,075,568
Illinois	2,434,555	244,445
California	1,340,271	1,884,784
Pennsylvania	1,298,516	483,392
Michigan	1,191,424	163,732
Ohio	1,183,419	291,277
Hardwood:		
Total	2,187,513	1,293,091
New York	691,451	302,596
Illinois	246,161	35,637
California	135,516	274,782
Pennsylvania	131,295	70,473
Michigan	120,466	23,870
Ohio	119,657	42,465

It is noted from the foregoing table that while New York consumption in 1928 was 31 per cent of the total, as against California's 6 per cent in 1933, New York took but 23 per cent and California increased her take of 21 per cent of the total. Not only that, California increased its softwood consumption in 1933 over 1928 about 46 per cent, and its hardwood consumption doubled. The consumption for all other States in 1933 was considerably below the consumption of 1928.

Undoubtedly the greatest amount of labor used for railroads is that used for ties. Here was the most important influence on the decline of the total. No figures are available for the early part of the country when railroad building was at its height, but figures show that there was a drop from 135,000,000 ties in 1923 to 46,000,000 ties in 1932.

The prime reason for the drop was of course, decreased railroad building but in addition, the introduction of a treatment which in some cases trebled the life of the tie, influenced a reduction in the use of new ties.

As stated, the next largest consumer of lumber after the Construction Industry is the Wooden Package Industry, which takes about 16 percent of the total production. There has been much complaint in the industry regarding numerous displacements of wooden containers by fibre and paper boxes. Undoubtedly this is true to a considerable extent but there is no statistical means of measuring this, due to lack of information on the Paper Container Industry at this time. The only way is to compare the index of industrial production with the total amount used for wooden containers. Table XXXI of this report indicates that in 1928 about 5,474,000,000 feet of lumber were used for this purpose. The Federal Reserve Board Index on Industrial Production with 1929 equal to 100, stood at 93 for 1928, and in 1933 only 2,949,000,000 feet of lumber were used for containers. The index of industrial production stood at 64 - a drop of 31 percent in industrial production as compared to a drop of more than 50 percent in wooden containers.

Certain sections of the industry, notably California, and Oregon, show somewhat less decline in wooden containers due to the fact that the fruit packing industry in the Northwest and the fruit and vegetable packing industry in California are still large users of wooden containers. In the East, the practice of using large veneer containers rather than the sawed wooden box containers so prevalent in the West, reduced the amount of lumber used for that purpose.

Over 75 percent of the lumber taken by the Wooden Container Industry is softwood. In 1929 Washington ranked first in the amount consumed, taking about 12 percent of the total, followed by Oregon, Michigan, Pennsylvania, Massachusetts, and Ohio, in the order named, each consuming more than 200,000,000 board feet annually. Pennsylvania takes the most hardwood for container, followed by California and Ohio in the order named. Considerably lesser amounts were taken by the other States. In 1933 California took by far the largest amount of softwood for containers, followed by Oregon, although it ranked seventeenth in 1928, Washington (first in 1928), Michigan, Pennsylvania, Massachusetts and New York in the order named.

The Construction Industry and the Wooden Container Industry together took approximately 80 percent of the 1928 lumber consumption, leaving about 14 percent for other industrial uses and 6 percent to be exported. Practically the same relationship prevailed in 1933.

In 1928 the total lumber used for industrial purposes was 4,945,000,000 feet. This dropped in 1933 to 1,907,000,000 feet-- a decline of slightly more than 60 percent as compared to the decline of 31 percent in industrial production of all other industries. It appears from the above that the decline in the use of wooden products was greater than the general decline in consumption of other industrial products.

While over the longer period there had been some increase in the use of lumber for industrial purposes, other than has already been discussed, due to the increased use of wooden automobile parts, this consumption began to decline during depression years with the advent of the steel body. Further, some displacement has been made by metal furniture and metal parts, which were formerly made of wood. While the Automobile Industry

is still using a considerable share of the lumber production, its rapid substitution of metal for wood has now placed consumption of wood at approximately the level consumed by the carriage and buggy industry. While there are claims of a reversion to wooden parts for many things, this may be due in a large measure to special development in the industry itself; and the trend may be further increased by the price level of lumber as compared with the price level of metal products.

It is worthy of note that whereas the great preponderance of lumber consumed by both the Construction Industry and the Wooden Container Industry was softwood, more hardwood than softwood is taken by other industrial users.

Although Michigan ranked first in 1928 in its consumption of lumber for industrial uses other than for construction purposes and for wooden containers, and North Carolina was second, in 1933 North Carolina ranked first, and Michigan second. California, though prominent in its consumption of wood for construction purposes and for containers, ranked eleventh in its consumption of wood for other industrial uses in 1928, and even lower in 1933.

The major hardwood consuming industries are shown in the following table:

MAJOR HARDWOOD CONSUMING INDUSTRIES

INDUSTRY	M. FT.	PERCENT OF TOTAL CONSUMPTION
Furniture	628,000	21.38
Boxes and Crates	516,000	17.57
Building and Construction	492,000	16.75
Railroad Construction	328,000	11.17
Railroad Car Construction	38,000	1.29
Flooring	222,000	7.56
Vehicles	191,000	6.50
Caskets and Coffins	46,000	1.57
Sash, Frames, Doors, Blinds, and General Mill Work	44,000	1.50
Handles	32,000	1.09
Miscellaneous	234,000	7.97
Unaccounted for	166,000	5.65

Source: National Lumber Manufacturers' Association, Docket No. 5, 1933.

It will be noted that the Furniture Industry takes the largest share of hardwood shipments. The Box and Crate Industry ranks second with demand areas scattered over the entire eastern section of the country. This latter industry uses the low-grade product of the logs and as a rule the less expensive woods, such as gum, tupelo, and cottonwood. It is an industry that in the past decade has had to face intense and ground gaining competition from substitutes such as fibres and paper containers. The saving in transportation cost through the utilization of a lighter weight container has been an economic competitive factor that the manufacturer of the wooden box has had to meet.

As early as 1626, the Colonists sent some lumber to Holland and from there it was reshipped to England. It is also worthy of note that for many years the timbers of the finest ships in the British Navy came from New England. Nor should it be forgotten that lumber, logs, masts, planks, stairs, tar, pitch, turpentine, and other forest products entered largely into that first nursery of foreign commerce. Trade with the West Indies; growing out of these Island transactions was the famous "three-cornered trade," in which New England and the Carolinas shipped forest and agricultural products to the West Indies; the West Indies shipped sugar and molasses to Europe; and Europe shipped manufactures to New England, so closing the circuit.

After the Revolution, great emphasis was given to the exclusion of the foreign trade of this country to the Orient. As a result shipments increased a pace, including lumber and forest products. By 1821, according to Department of Commerce data recorded exports of sawmill products and naval stores, gums and resin (wood manufacturers not recorded) amounted to $1,828,000,000 -- 43.5 percent of total exports for that year, and in 1913, just prior to the World War these exports including wood manufacturers, amounted to $134,190,000, or 5.5 percent of total exports.

The table on the following page shows lumber exports for the years 1929 and 1932-1934.

The above mentioned table does not include total shipments, because comparable figures are obtainable only for the items shown. They constitute, however, the major portion of the footage shipment of the industry. While, again, there are no footage and value figures directly comparable which completely encompass the Lumber Industry, it is perhaps worthy of note here that the total value of exports in 1929 constituted about three and one-half percent of the total exports of the United States. If this percentage is set off against eight and nine percent, the amount of exported manufactured goods of this country in relation to total production, the relatively collective unimportance of lumber exports is evident.

Aside from the fact that exports of both softwood and hardwood lumber dropped off rapidly from 1929 to 1935, the preceding table is significant as showing that small hardwood dimension stock increased over the same period. The 1934 shipments represent an increase of about 74 percent over 1929 shipments.

LUMBER EXPORTS

(M. Bd. Ft.)

Kind	1929	1932	1933	First 9 months of 1934	1935
SOFTWOODS*					
Douglas Fir	1,450,115	495,708	574,504	591,402	398,140
So. Pine	810,782	331,265	341,924	383,985	280,780
Wes. Pine	41,482	14,353	17,358	28,409	24,948
Redwood	62,280	8,219	14,185	18,611	11,544
Cypress	11,087	2,847	3,764	4,611	3,436
Other	239,520	45,699	30,505	28,741	22,871
Small Dimension Stock	5,337	65			
TOTAL	2,620,603	898,156	982,240	1,055,759	741,719
HARDWOODS*					
Ash	38,781	27,849	35,995	44,381	26,660
Gum	53,904	28,776	36,996	33,000	25,860
Oak	231,024	132,347	155,549	130,124	115,571
Popular	40,383	16,265	21,979	23,903	20,629
Other	87,626	23,763	28,677	34,060	25,799
Small Dimension Stock	5,407	4,984	6,600	9,415	6,355
TOTAL	457,125	233,984	285,796	274,883	220,874
TOTAL - SOFT AND HARDWOODS	3,077,728	1,132,140	1,268,036	1,330,642	962,593

SOURCE: Foreign Commerce and Navigation of the United States - 1929-1932-1933-1934.

* Includes boards, planks, scantlings and sawed timber.

The hardwood dimension segment of the Lumber Industry, though relatively small, felt the depression effect to but a minor degree in the volume of the export business. This fact would seem to point to a fast growing tendency of consumers of this industry's product to purchase requirements as far as possible in the form of semi-fabricated material at the source of supply. This trend presages an evolution of the lumber industry and one that will doubtless be found to be of value in its competitive battle with substitutes.

Products competing with lumber and timber products are numerous and varied. Nearly all building materials compete directly, and either have displaced or are displacing lumber to a large extent in the construction field.

Displacement of lumber by structural steel, cement, stone, and fire clay products (brick, terra cotta tile,) and other shifts in commodities consumed, may be separated into three classifications: (a) Shifts due to changes in relative volumes of different types of building construction, (b) temporary shifts due to price competition, (c) permanent commodities' substitution. The first factor measures long-term but only partially permanent shifts in displacements; the last factor of primary importance measures the permanent changes in potentialities for consumption of competing commodities.

The following table shoes the percentage of displacement of lumber by steel, cement, brick and stone for the period 1919 to 1932:

PERCENTAGE CONSUMPTION OF MAJOR BUILDING MATERIALS

Year	Lumber	Steel	Cement	Brick	Stone	Total
1919	59.7	10.8	11.8	15.7	2.0	100.0
1920	52.6	13.6	14.9	16.4	2.5	100.0
1921	56.4	5.9	17.2	17.3	3.2	100.0
1922	50.8	11.8	15.6	18.4	3.4	100.0
1923	50.6	11.9	15.3	19.2	3.0	100.0
1924	48.7	12.2	16.8	18.9	3.4	100.0
1925	49.1	12.2	16.3	19.1	3.3	100.0
1926	47.2	13.5	16.8	18.9	3.6	100.0
1927	45.4	13.8	18.0	19.0	3.8	100.0
1928	48.3	14.2	16.8	17.2	3.5	100.0
1929	44.1	17.2	17.3	17.4	4.0	100.0
1930	40.4	17.1	20.6	17.1	4.8	100.0
1931	44.0	14.6	21.2	14.3	5.9	100.0
1932	46.0	11.8	21.4	12.1	8.7	100.0

Source: Mr. Victor Perlo, Division of Research and Planning, NRA, Table I, of unpublished report of February 20, 1934, - entitled "Displacement of Lumber in Building Construction."

Brick includes common, face, and vitrified brick, terra cotta, hollow building tile, and fire brick.

Stone includes buidling stone, rubble, and riprap.

According to the preceding table, lumber supplied by far the largest percentage of major building materials for the entire period 1919 to 1933. Although somewhat irregular there was, however, a consistent downward trend in this percentage to 1930 when the trend turned upward and became sharp in 1932. This spurt was due to price competition, for there was a decline in lumber prices in 1931. Quite the reverse is generally true for the other four commodities tabulated.

Steel, with exceptions in 1920 and 1921, increased in use until 1931, when it dropped off rapidly. The percentage consumption of brick increased slowly to its high in 1923, where it held steadily until 1927, thereafter dropping rapidly as a result of displacements by cement or stone, until by 1931 its percentage was less than in 1919. Cement and stone steadily increased in use until in 1932 when cement had about doubled its proportionate consumption, and stone had more than quadrupled its consumption. It is evident, therefore, that although they have a long way to go to supplant lumber, cement and stone are slowly but surely whittling away lumber's predominant place as a major building material.

The following table showing percentage distribution of major building materials, by class of building, is particularly significant, clearly indicating the large losses lumber has made to its four competitors in all three types of construction.

PERCENTAGE DISTRIBUTION OF MAJOR BUILDING MATERIALS BY CLASS OF BUILDING

Year	Lumber	Steel	Cement	Brick	Stone	Total
Residential:						
1919	92	0	6	2	0	100
1931	68	0	9	22	1	100
Industrial:						
1919	25	27	11	36	1	100
1931	19	42	15	22	2	100
Public:						
1919	40	10	28	14	8	100
1931	29	16	39	2	14	100

Source: Mr. Victor Perlo, Division of Research and Planning, NRA, Table I, of unpublished report of February 20, 1934, entitled "Displacement of Lumber in Building Construction."

The foregoing tables and broad generalities should not entice the reader into assuming that the lumber industry is, as a result of its market loss to vigorous competition, about to relinquish its preponderant dominance of construction materials. The age-old use of wood, its comparatively easy fabrication into a multiplicity of products, and its relative cheapness, to say nothing of intangibles which have always given it a particular allure, will probably keep it well to the forefront of major industries.

The intrusion of other materials in fields of wood use is an inevitable expression of the modern age and the eagerness of consumers for new and improved products and services. It is quite obvious, therefore, that there is a vital need for more scientific and technical research in wood and its products to the end that the increasing encroachment of extra industry products may be countered successfully.

The competitive surge within the Lumber Industry of the present date had its beginning in Colonial days, when lumbering was pursued in a primitive way in all new communities in connection with the clearing of fields and the founding of settlements. As settlements grew, demand increased. Because of inadequate means of transportation in those days, the increasing demand had to be supplied largely from the neighborhood. Thus there developed the hundreds of little lumbering centers with their varying regional distribution problems and embryonic competitive practices.

As consumer demands increased through the years, competition became keen, even vicious, in its malpractice and blindness. Up the spiral of increasing prices the industry chased the consumer's dollar, only to find that such myopia actively lessened consumption and thus forced prices to fall almost as rapidly as tney rose, more often than not to a demoralizing plunge below cost.

Many competitive causes have contributed to the impoverished and distracted condition of the Lumber Industry today, prime among which are: (a) Regional and species competition, (b) extra-industry competition, (c) intra-industry competition, (d) competition from exports, (e) and distributor competition. Obviously all of these contributing causes, discussed below, are flanked with their own disturbing satellites such as production costs, transportation costs, prices, etc.

Broadly speaking there are three principal regional areas producing softwood that are in competition for the consuming markets of this industry. The first is the Southern Pine Region which includes all of the Southeastern States, also Arkansas and Texas. The second is the Western Pine Region embracing practically all of the mountain States and third, the West Coast Region. This West Coast Region produces principally Douglas fir and this wood comes directly into competition with Western pine in all of the western and mountain States and enters into direct competition with Southern pine in all of the central western area on a rail transportation basis. The Douglas fir from the West Coast Region also enters into competition with Southern pine on the East Coast through the medium of water transportation, but Western pine, being required to transport by rail, cannot extend its area of competition all the way to the Eastern Seaboard. It has generally been considered in the industry that the meeting point of competition for these three species was the

middle western consuming area centering around Chicago, Illinois, and the states immediately contiguous thereto.

Naturally, transportation costs enter largely into the delineation of the markets available to these species and especially between Douglas fir from the West Coast and Southern pine the control of the softwood market has fluctuated depending upon advantage that first one or the other region might secure in transportation rates.

In the middle western area all three of these softwood species enjoy equal opportunities, and this is the major price battleground. In the North Atlantic and the Middle Atlantic States where there is also a very considerable consuming population, Douglas fir, through its water transportation rates, has been in a position to largely take away the major portion of the softwood market. A very considerable part of the softwood delivered by water at the principal ports of the Eastern Seaboard is not consumed in that area. Just what volume this backhaul of Douglas fir amounts to is a matter for conjecture as there are no dependable statistics available, but it is presumed to be very considerable portion of the lumber products being landed at the Eastern Seaboard ports from the West Coast ports.

In the West Coast and the major part of the inter-mountain area competition is entirely between Douglas fir and Western pine. In California, which is the largest West Coast market, there has been a continual shift back and forth between Douglas fir and Western pine. Moving out of the inter-mountain area, competition between softwood species is confined to Western pine and Douglas fir in the two mid-western states of North and South Dakota and in the Lake State of Minnesota.

Southern pine is the most used softwood species in the Lake States, the southern group of mid-western States, the Southwestern States and in the Southeastern States, with Douglas fir and Western pine alternating for second and third places. This is natural for here Southern pine has the competitive advantage because of the shorter haul from producing to consuming centers.

The production of the Northeastern Softwood Division, consisting principally of hemlock, spruce and white pine, is largely consumed within the New England States, New York, Pennsylvania, New Jersey and West Virginia; they are all competitive within that area with the softwoods from the other main softwood producing divisions. Aside from use in general construction the products of this division are used in large quantities in the manufacture of sash, doors, blinds, and general millwork, boxes, baskets and crates.

The products of the Northern Pine Division consist of white pine, Norway pine and miscellaneous softwoods produced in the State of Minnesota. The distribution of these woods for general construction purposes is confined to a more or less limited territory adjacent to Minnesota. One of the principal outlets of pine in this territory is

to manufacturers of sash, doors, blinds, and general millwork.

The spruce, white pine and hemlock shipped from the Northeastern and Northern Divisions are all competitive with Western pine, the West Coast woods and Southern pine, and when used in general construction work their territory ends where freight rates and other factors permit the products of the three major divisions to meet them on a competitive basis.

The geographical areas of competition for hardwood lumber are to a certain extent dictated by rail freight rates which each producing division has to pay. Because of this, certain divisions furnished the majority of stock in certain areas. For example, the Northeastern Division furnished the North Atlantic area with 58.58 per cent of that area's total hardwood consumption in 1929.

The New England States are farthest removed from other hardwood producing areas. It is therefore to be expected that this area would draw most of its hardwood from the Northeastern Division. The Southern and Appalachian Division competes for second place in use in the North Atlantic area. This may be because of the fact that while on the whole freight rates from the Appalachian Division are less than from the Southern Division, this advantage is somewhat offset by Southern hardwood being priced somewhat lower than Appalachian hardwood.

The mid-Atlantic area, comprised of New York, New Jersey, Pennsylvania, Delaware, Maryland and the District of Columbia, affords a better competitive opportunity to Southern and Appalachian hardwood than does the North Atlantic area. The large volume of lumber supplied the middle Atlantic area by the Northeastern Division, which almost equalled that supplied by Appalachian, is occasioned by the fact that Pennsylvania and New York, particularly the former, are large hardwood producing States.

The Southern Hardwood Division supplies the larger part of the hardwood requirements of the Southeastern area, with the Appalachian Division furnishing almost the balance. It is the second largest area of consumption for hardwood. This is because of the heavy conversion of lumber into fabricated products or finished parts within these states of production. There is a large manufacture of flooring, furniture and automobile parts in these States. This activity is an evidence of the tendency toward fabrication at the source of supply of the raw materials and of progressing integration of manufacture in the industry.

The Lake States area, comprising Ohio, Indiana, Illinois, Michigan, Wisconsin and Minnesota, is the largest hardwood consuming area in the country because of the many woodworking plants located in that area. Michigan is the largest consuming state, with Illinois, Indiana and Ohio alternating for second place. The Northern Division supplies the larger part of the Lake States' consumption, with the Southern Hardwood Division, because of price, furnishing the next larger part. The Midwestern Area, comprised of the States of Missouri,

Kansas, Iowa, Nebraska, South Dakota and North Dakota, draws the greater part of its hardwood requirements from the Southern Division because of its cheaper price.

While the inter-mountain area, comprised of the States of Montana, Idaho, Wyoming, Colorado, Utah, Nevada, Arizona and New Mexico, drew 75 per cent of its total consumption in 1929 from the Southern Division, in 1932 it drew but 52 per cent from that Division; while the Northern Division shipment into the area went up from 5 per cent in 1929 to 29 per cent in 1932. This might be accounted for by a competitive price effort of the Northern Division to market its production although, of course, it might be the result of a preference for a particular type of wood. In 1933 and 1934 the Southern Division shipped a trifle over 57 per cent of the hardwood consumption of this area. The Northern Division dropped back to a little over 8 per cent, and the Western Division went up to slightly over 33 per cent, a material increase over its percentages of 1929 and 1932. This large increase might have been due to the effect of Code prices, as such prices may have encouraged the hardwood consumers in that area to purchase more stock produced within the territory. However, this area is a small consumer of hardwood.

The Pacific Coast area is one in which the consumption of hardwood appears to be growing. This is doubtless because of the increase in fabrication taking place in the Pacific Coast States. While Washington and Oregon draw the majority of their hardwood from the Western Division, California secures the larger part of its requirements from the Southern Division. In 1929 California was decidedly the heaviest consumer, the shipments into it being more than twice as much as into Washington and Oregon.

California consumes more redwood than any other State; it is shipped in lesser quantities to Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin. In fact some redwood goes to all States, except those in the deep South and the States in which the directly competitive wood, cypress, is produced. Redwood is chiefly used in planing mill products, woodwork, tanks, silos, caskets and coffins.

Cypress is widely distributed throughout the South, the East and the Central States, and is shipped in fair quantities to practically every State east of the Rocky Mountains. It was for many years largely used in the production of doors, frames and sash, but within the last two decades has lost much of its consumption to Western pine and Douglas fir.

No figures are available to show the destination of the imports of lumber or of forest products into the United States; however, the areas are well known in which the species are used and it is a reasonable assumption that the majority of the imports are consumed in the areas which they enter.

In the year 1929, 86,994 M ft. of fir, spruce or Western hemlock logs were imported, all of which came from Canada. In 1929, 37,936 M ft. of lumber were imported from Soviet Russia, and while the species is

not known it can be concluded that the majority, if not all of it, was spruce. In 1932 the imports of fir, spruce, or Western hemlock logs dropped from just under 87,000 M ft. to 58,933 M ft., all of which came from Canada.

The imports of softwood lumber also dropped materially in 1932. In this year 126,819 M ft. of softwood, species not specified, were imported, of which 125,704 M ft. came from Canada. In addition to the unspecified softwood, there were 50,185 M ft. of fir, all of which came from Canada.

Hemlock lumber imported in 1932 was negligible, amounting to only 3,153 M ft., all from Canada. The importation of spruce lumber in 1932 totaled 125,698 M ft., of which 90,580 M ft. came from Canada, 31,410 M ft. from Russia, and the remainder in small quantities from Germany and other European countries. The total imports of pine lumber in 1932 amounted to 45,928 M ft., of which 43,085 M ft. came from Canada, and slightly over 2,000 ft. from Mexico, the majority of the remainder, 587 M ft. coming from the British West Indies.

In 1933, 86,579 M ft. of fir, spruce and Western hemlock logs were imported, all of which came from Canada. The volume of unspecified softwood lumber amounted to only 4,199 M ft., all from Canada. The volume of fir lumber imported in this year also dropped, the total being 22,729 M ft., most of it from Canada. The imports of hemlock amounted to only 2,473 M ft., all of which came from Canada. The imports of spruce increased, the total imports amounting to 176,000 M ft. The imports of pine lumber in 1933 increased in excess of 100 per cent, 104,066 M ft. being imported, of which 102,626 M ft. came from Canada, 1,400 M ft. from Mexico, and 26 M ft. from Trinidad and Tobago.

The importation of spruce, fir, or Western hemlock logs decreased materially in 1934. In that year there were only 17,340 M ft. imported, of which 17,338 M ft. came from Canada; the other 2 M ft. came from Kwantung. The imports of unspecified softwood lumber in the year 1934 amounted to 5,237 M ft., all of which came from Canada. Imports of fir lumber amounted to 4,085 M ft., of which 4,076 M ft. came from Canada. Imports of hemlock were only 821 M ft., all of which came from Canada. The imports of spruce amounted to 142,260 M ft., of which 124,088 M ft. came from Canada and 13,023 M ft. from Russia, the remainder coming from other European countries. The importation of pine declined to 91,194 M ft. of which 86,959 M ft. came from Canada.

Advance data, subject to revision, of the Bureau of Foreign and Domestic Commerce of the Department of Commerce, show that in the first eight months of 1935 there were imported 66,660 M ft. of fir, spruce, and Western hemlock logs, all of which came from Canada. In this same period 13,865 M ft. of unspecified softwoods were imported, also from Canada. The imports of fir lumber in the first nine months amounted to 53,255 M ft. from Canada; imports of hemlock 6,312 M ft., all from Canada; imports of spruce 133,655 M ft. of which 11,905 M ft. came from Canada and 15,855 M ft. from Russia. The imports of pine amounted to 70,184 M ft. of which 66,332 M ft. came from Canada.

The total imports of softwood lumber declined steadily from 1929 through 1934. In the latter year the smallest amount was imported for any year since 1929, the total footage being 243,597 M ft. of which approximately 233,000 M ft. were spruce and pine.

The figures for the first nine months of 1935 show an increase over the total of the year 1934 and a marked increase in the quantity of fir imported -- about 53,000 M ft. in the first nine months, as against 4,000 M ft. in the entire year 1934. It is of interest that of this 53,000 M ft. only 841 M ft. were imported during the first four months of the year. Approximately 2,400 M ft. entered the United States in May, the June, July, August and September imports increasing respectively to approximately the following: 9,800 M ft., 16,500 M ft., 11,700 M ft., and 11,700 M ft. for September.

This marked increase from June on can probably be attributed to two factors: (1) The strike on the West Coast which tied up many coastal mills, and (2) the fact that Canadian shippers may have avoided sales in the United States during the Code period due to the feeling that a quota such as was established for red cedar shingle shipments might also be established for lumber and that this feeling was abated after the decision in the Schechter case.

It is further known that during the summer of 1935 some 16 cargoes moved from British Columbia at freight of from $8.50 to $9.00, whereas the Inter-coastal Conference rate at that time was $12 per M ft.

The imports of spruce and pine lumber present a different picture from that of the West Coast woods. While fir and hemlock were declining in volume during 1932 to 1933 and 1934 the imports of spruce increased from approximately 125,000 M ft. in 1932 to 176,000 M ft. in 1933 and decreased to 142,000 M ft. in 1934. Imports of pine in 1932 amounted to just under 46,000 M ft., increasing to slightly over 104,000 M ft. in 1933 and decreasing to just under 87,000 M ft. in 1934.

The figures for the first nine months of 1935 indicate that the imports in 1935 will equal and probably somewhat exceed those of 1934, but will not exceed the 1934 figures to the extent that the importations of fir and hemlock in 1935 exceeded those of 1934.

The species of softwood lumber that are native to Northeastern states are approximately the same as those found in the adjacent areas in Canada; therefore the imported spruce and pine is highly competitive in the Northeastern territory with the native woods produced in that territory, the competition becoming still more accentuated as the domestic Northeastern and imported woods enter those areas into which Southern Pine and the West Coast woods are being shipped.

While it is a fact that some of this imported softwood lumber moved out of the New England and New York area, it can safely be concluded that the competition of the southern wood confines the use of the majority of the imported softwood to that area. Approximately the same conclusions are applicable to the Lake states and the importations of lumber which enter through the Dakotas, Duluth, Superior and Michigan customs districts.

The effect of these imports on domestic prices and domestic production cannot be definitely established. It is known, however, that imports of fir and hemlock materially increased in the first nine months of 1935 over the year 1934, although there was a combined duty and tax of $4.00 per M feet in favor of the American wood.

Competition within the Lumber Industry itself is and always has been rife, and as in many other industries has tended in its avaricious and headlong way to destroy the very value it would enhance. Wasteful felling of trees, merely to secure a more profuse and easier cut for competitive markets, regional disputes, species propaganda, transportation problems, stumpage speculation, price fixing, production control, over-capacity, apathy toward changing consumer demand, trade association antagonisms and other competitive factors have all helped in the past to ensnare the industry in a net from which the Code attempted to free it and with a modicum of success.

Although some of the foregoing competitive practices resorted to by the Lumber Industry in an effort to hold old business and gain new markets have been alluded to and have been discussed in other sections of this report, it is deemed advisable to bring them together here to focus attention solely on their bearing upon competition. These named may not be a complete catalog of the practices and conditions making up the complete competitive field within the industry itself but are sufficient for the purpose indicated.

Perhaps the most important competitive problem of the industry prior to the Code was that having to do with the actual sale of the products. There was little cooperation between general sales plans and no clearly defined function for the various types of distributors. Small dealers were fast going into bankruptcy. In 1933 sales by sawmills were only two and eight-tenths times inventory, whereas in 1926 they had been four times inventory. Collections were slow, the elapsed time between invoice and collection in 1933 being 117 days against 75 days in 1926. Earnings for assets employed were the third highest of all industries in 1920, with 89 per cent of assets employed in that year earning a profit; whereas in 1932 the industry earned a profit on only eight per cent of its assets.

Just where the creaking machine needed the most grease no one knew. Before the Code the industry was not fully organized, with only a framework of warring trade organizations engaged principally in looking after their own legislative requirements and in gathering statistics of the industry. The process of code formulation and code operation served to integrate the industry and to encourage a more democratic approach to its distribution problems. Under the Code the industry attempted to define the channels of distribution. Just what was done and the results therefrom are discussed in other sections of this report.

It has already been pointed out that changes in consumer demand are to be recognized and met, not combatted, if competitive markets are to be retained, much less expanded. One might well go a step further and urge that aggressiveness be the order of the day and not merely a laissez-faire attitude taken, even though it cannot be denied that for certain forest products recent consumption trends, aggravated

by the depression, have been discouraging to producers. Perhaps the way to greater heights for the industry is through closer cooperation among its widely-scattered and generally inarticulate membership, wise synchronization of the technological improvement with employment needs, increased research, and more unified and less capricious distribution methods, to the end that the industry may be an entity in combatting the onrushing tide of extra industry competition.

There are three major distribution channels in the Lumber Industry, namely, the wholesaler, the commission salesman, and the retailer. In addition, sales are made by sawmills direct to manufacturers and to retailers through their own sales department, directly for export, and in other miscellaneous ways. The object of this section is to: (a) Define and describe these major agencies; (b) to delineate their competitive activities; (c) to review pre-code efforts and their results; and (d) to discuss code efforts at regulation and the results of such efforts.

The Lumber and Timber Products Code defined the wholesaler as:

> "A person actively and continuously engaged in buying, assembling, or rehandling lumber and timber products from manufacturers or other wholesalers in quantity lots and selling it principally to wholesalers, retailers and recognized wholesale trade, who maintains a sales organization for this purpose, assumes credit risks and such other obligations as are incident to the transportation and distribution of lumber and timber products. Wholesale Assembling and Distributing Yards as defined in Divisional Rules and Regulations shall also be classed as wholesalers."

In addition to the functions performed by the wholesaler as described, certain wholesalers likewise financed mills and retail yards. A wholesaler's organization will naturally vary with the type and scope of his activities. Some maintain buying representatives or agents in the producing areas when headquarters are located elsewhere.

The variation in the type of wholesale activity is partially due to the development in the distribution channels of the Lumber Industry. In its earlier years there were relatively few wholesalers and these were in a strong financial position and handled a large volume of lumber. The customary operating practice of that day was for the wholesaler to buy very large stocks of lumber on contract and not infrequently to contract the entire cut of a number of mills for the year. Many times the arrangement provided for certain financial assistance and often for instruction and advice. In that day nearly every wholesaler had one or more yards either in the consuming area or at the mills, or both.

As time progressed and industrial conditions changed, there came into being a relatively larger number of wholesalers, and buying practices changed to the point where today the wholesaler is in the main a financial broker and salesman purchasing units as small as a

car at a time and carrying a relatively small stock, if any at all.

Wholesalers of lumber are located in all parts of the country, the bulk, however, being east of the Mississippi River. The principal wholesale trade association, the National American Wholesale Lumber Association, with headquarters in New York, had a membership of 573 in 1928 and approximately 300 in 1934 and 1935. While there are no available statistics, the association estimates that in 1933 there were approximately 1,300 wholesalers who were not members of that association.

Because of distance from large consuming areas and consequent lack of constant contact with the buyers, the Douglas fir manufacturers and the Western pine manufacturers use the wholesale channel of distribution to a relatively larger extent than do other divisions of the Lumber Industry which are located nearer to the points of ultimate consumption. This condition is, of course, being changed to some extent through the establishment, by these remotely located manufacturers in the Douglas fir section, of wholesale distributing yards on the Atlantic seaboard. Shipments of Douglas fir by water through the Panama Canal to the Atlantic seaboard has had a continuous growth in volume and in this both the wholesaler and the intercoastal wholesale distributing yards have played a large part.

This development in distribution has given birth to the problem of "transiting" of stocks, cognizance of which was taken by the Code and outlawed. A wholesaler would undertake to dispose of certain cargoes of lumber after they had been put in transit from the West Coast. If unsuccessful in this effort either in whole or in part, the only alternative was to carry these unsold stocks upon arrival on trucks or cars, or incur the expense of yarding if the wholesaler had a yard. Storage in cars was used at points where car service charges were less than yarding charges, and this naturally tied up railroad equipment. The pressure to move these unsold stocks in order to avoid carrying charges constituted a pressure on market prices that was unjustified by the volume of these unsold stocks as related to total consumption.

There also arose the practice of consigning stocks to the retail yards to be paid for when sold. This also was outlawed under the Code as it was held that it was unfair to the small producer who was unable to cope with this type of competition.

The outlets of the wholesaler are the retailer, the industrial buyer, the railroads, government (state and municipal) purchasers, and to some extent the contractors. The first four were generally recognized in the Lumber Industry prior to the Code as legitimate customers of the wholesale group. There has always been some question as to whether the contractor was the legitimate customer of the wholesaler or of the retailer and around this point developed the difficulty in the Code period of defining what constituted wholesale trade, as well as the effect of the wholesaler upon the Code and of the Code upon the wholesaler.

There are no available statistics as to the actual quantity of the industry's production that is marketed through the wholesaler, but according to the National American Wholesale Lumber Association it has been for years estimated that this movement can conservatively be placed at 60 per cent.

In the earlier days of the industry, and even yet to a very considerable extent, the wholesaler of lumber who would buy mill stocks or large quantities of lumber and yard and classify such material and then sell, had a very important place in the industry. He is still an important factor but does not dominate the movement of lumber from manufacturer to retailer as in the past.

The commission salesman is a very valuable sales outlet for many lumber manufacturers. They are probably more valuable when they represent one or more companies producing different products, for they provide a sales outlet for those companies at much less cost than a wholesaler or a sales organization financed by the company or companies themselves. On the other hand, the commission salesman who acts as a buyer's agent and uses his knowledge of a producer's stock to beat down the price is a competitive factor that is very detrimental to the industry at large.

Numerous cooperative activities on the part of lumber manufacturers, like organized collection bureaus, the interchange of mill prices and the publication of association price lists and discount sheets, have in the past tended to check competitive fluctuations in the wholesale markets. The same is true of various informal local agreements and other attempts to maintain uniform prices. The effect of such forms of cooperation among lumber producers has been exceedingly variable both in different regions and at different times. It has depended upon the number and financial strength of the plants concerned, the quality and volume of their output, pressure of timber land investments to increase mill capacity to maintain continuous production, the manufacturing conditions to be met, like the necessity for prompt shipment of some species and grades of lumber, and the condition of the market. Cooperation has usually been more effective when the demand for lumber is strong and prices are rising, and has largely been ineffective when opposite conditions prevail. This was exactly the condition prevalent for some time prior to the Code.

To just what extent dishonest and deceptive grade manipulations or substitutions, the raising of invoices, and similar nefarious practices prevailed in the wholesale merchandising of lumber and timber products is undetermined. Perhaps of the total volume of lumber sold daily, a relatively small proportion is subject to such practices, although it is generally admitted that a great volume of lumber passes through a process called the "ethical" blending of grades. Such practices obviously not only cheat the customer but tend to disrupt the market locally by establishing a fictitiously low price for the grade which has been manipulated.

There have been many concerted efforts in the past by associations of lumber retailers separately or in conjunction with manufacturers to control the competition of wholesalers by a "classification" of the trade. These classifications were partially effective, though subject to many local exceptions and variations. Just prior to the Code, however, while the dictates of "trade ethics" as between wholesaler and retailer were still recognized to some extent, the trend was away from restrictions upon competition.

This attitude of at least a negative regulatory mechanism of the wholesaler is exemplified in many ways. Take for instance the retaliation of wholesalers against retailers who bought direct from mills. Wholesalers, as an offset of this latter-day practice of retail dealers, became proficient in looking after the needs of the contractor, whose purchases, incidentally, had become greater than those of the master carpenter. The bitterest kind of competition between the wholesalers and retailers ensued. The Lumber Industry itself, represented at best by loosely federated associations, was in no position to frame either local or national regulations, much less to carry out punitive measures.

In general, but without limitation, the above-cited attempts at regulation of wholesale practices brings this type of effort in the Lumber Industry down to the time of Code conferences. Code efforts at regulations and their results are discussed immediately after the following discussion of pre-code efforts at regulation in the retail trade. In addition to other sources, Code hearings and the codal history of the industry contained illuminating information on this subject.

The retail lumber dealer was defined under the Retail Lumber Code as:

> "A person who maintains an adequate and permanent plant or plants which are properly equipped for service to the public, with office, with storage yard or warehouse, kept open during business hours, with such handling facilities and sales service as are commensurate with the nature of the business, and who carries a sufficient stock of lumber and building materials (for the purpose of selling at retail in small or large quantities and not for his own consumption) to supply the general requirements of the community."

In the early days the retailer's position was much more definitely fixed and in a very much broader field than at the present time. Up until recent years the retailer supplied practically all of the lumber requirements of those located in his trade area or vicinity, and the user of lumber in practically any quantity dealt with the retailer as the only source of his lumber supply. As competition increased between mills and mill selling agencies or representatives, this representative position of the retailer in most communities was destroyed and, generally, he is now the supplier of lumber in only small quantities.

A contractor, a builder, or an individual owner contemplating the erection of even one structure that may use as little as one carload of lumber (approximately 20,000 feet) would be solicited to buy this lumber from other than the local retail lumber dealers. As quantities needed would increase, the prospective purchaser would have other channels open to him through which his wants could be supplied.

The manufacturers of lumber and other distributive agencies recognize, however, that the retailer of lumber has a very important part in the industry. Practically every community, however small, has had some type of retail lumber supply offered to it even though this lumber supply might have been carried simply as a side-line to other merchandising activities.

There are approximately 23,500 retail lumber dealers in the United States. They handle a great many materials other than lumber; however, the latter represents about 72 per cent of their total business.

In the retail lumber business consideration must be given to the different kinds of retailer and retail establishments, primarily from the standpoint of the machinery of the control of such unit. It was recognized that a very considerable majority of these retail dealers were owned, controlled and operated as independent economic units. It was also realized that there were a considerable number of retail yards, especially in certain sections of the country, which are known as "line yards." These yards, ranging from two in number upward, are operated under one management with buying and selling methods, credit policies, and other elements being controlled by a common head and generally uniform in practice in each of the constituent yards. Some of these "line yards" groups are purely retailer organizations with activity based primarily upon the buying and the selling of the products to produce a profit for the owners. Other groups of "line yards" were established by manufacturers whose principal motive was the setting up of retail outlets for the products of their own sawmill and manufacturing plants. Other "line yard" groups, smaller in number, were reputed to be largely controlled by wholesalers of lumber, and again in practically every instance the actuating motive was to supply distribution centers and outlets for certain if not all of the products controlled by the particular wholesaler.

In the field of retail distribution the cooperative groups have also grown up within the past few years. Lumber, as one of the products needed by many of the individual members of these cooperatives, became one of the products handled, and in the section of the United States where the cooperative movement has gained the most ground, it was not uncommon to find lumber yards connected with the other activities of the cooperatives, which, of course, primarily consisted of the marketing of products of the members and the purchasing of those articles of commerce most commonly used by them.

These various types of retail distribution units naturally came into competition with one another. It can readily be seen that the small independent lumber yard located in a rural or urban community, being compelled to purchase its material as a single unit, would find itself at a disadvantage in selling when it came in competition with a "line yard" unit where the lumber for that unit had been purchased as a part of the quantity needed for the supplying of several similar and allied yards. Again competition would be faced from those yards controlled by the manufacturers who would not need to calculate, in his final costs, at least one intermediary step. The competition of the cooperative organizations with the retailers would not, of course, be particularly effective unless the cooperative organization was of sufficiently broad coverage to include a considerable portion of the rural users of lumber.

In considering retailers thought must be given to the differences between the retail lumber yard in the urban communities and the retail lumber yard in rural communities. Not only does the first class of lumber yards have high rents, high wages and high inventories to contend with, but they must also be in a position to extend considerable credit and to make deliveries over an extensive field. On the other hand, lumber yards located in rural communities have rents and wage scales considerably lower than the urban yards, and generally speaking they are not required to deliver their merchandise and naturally are not required to carry particularly large stocks. In many of the rural yards their business has developed in later years to practically a cash and carry basis.

The channels of distribution discussed above relate particularly to the softwoods and, to a limited extent, to some of the more commonly used hardwoods, but the production, sale and use of the principal hardwoods differ so materially from the softwoods that a specialized service of distribution grew up for this particular species.

Important in the business of the retailer of lumber were the various and constantly growing number and character of products competing with lumber. The retailer has been compelled to carry competing products and many other substitution products. His stocking of these items was made as easy as possible, as naturally the manufacturers or distributors of any products competing with lumber were anxious to have these competitive articles as widely distributed as possible.

The retail trade is roughly divided into two classes. The first, commonly called "retail sales" or "wagon trade" constitutes the small transactions incident to the current demands of the community for small job work and repairing. Such sales are, by and large, made under far less competition than the large sales of the second class. Efforts at their regulation, therefore, have been less important and correlatively less attendant with any action in that direction.

The second broad class of retail trade is that commonly called "estimate," "bill sales," or "contract business." These are the larger sales such as house sales, special contracts, etc., which are made usually upon competitive quotations or at fixed discounts to contractors and carpenters who are in the habit of dealing exclusively with one

concern. It is obvious that this definition inherently contains regulatory measures respecting quotations and discounts.

Under the Retail Lumber Code it was hoped that a bottom could be placed under retail prices by the development of industry cost data and the determination of the so-called mode of these costs in each of the 32 divisions of the retail trade.

In the early application of this principle it was pointed out by the retail dealers that certain costs of handling lumber were relatively the same. This group of costs were generally classified as yard and delivery expenses, and the theory was that it cost the retail lumber dealer just as much per thousand feet to unload, yard and deliver a grade and size lumber that cost $20 per thousand feet as it did a grade and size of lumber costing much more.

The Administration accepted the view of the retail dealers and sought to establish a composite modal mark-up consisting of a flat price for yard and delivery costs varying essentially only in accordance with the different minimum wage rates specified in the Code, and the additional costs were then to be expressed in a percentage of mark-up on cost of the lumber plus freight. This added a further complication to the development of a minimum or floor selling price for lumber at retail.

The majority of the retail dealers reacted favorably to the general application of the Code provisions establishing or seeking to establish minimum retail prices, but there was considerable uncertainty by the dealer as to exactly what he could quote, which was increased by difficulties experienced by the Code Authority for the Lumber and Timber Products Industries in their attempt to regulate and to establish the prices at which the retail dealers could purchase their supplies.

There was the objection by strictly cash yards that they should not be compelled to include in their selling price a percentahe calculated upon the cost of dealers who were required to maintain expensive bookkeeping and credit departments. These matters were again apparently satisfactorily adjusted by negotiations between NRA and the Code Authority for the retail dealers.

As the result of these various adjustments it was necessary to again establish a modal mark-up and to specify the application of its various factors in such manner as would work as few inequities as possible. This basis was established by order of the Administrator carrying forward to March 1, 1935. It was recognized in the industry that the establishment of the modal mark-up did increase many of the prices and did materially stabilize the retail prices of lumber.

There seems to be no doubt that selling direct to consumers by the mills and by the wholesalers increased during the codal period, which was undoubtedly brought about by the discount of eight per cent to the wholesaler as specified in the Code and by the modal mark-up which left such a large spread between the wholesale or mill price and the retail price that the mill and wholesaler could well afford to compete for retail business, particularly with the limited demand. The

basing point system and delivered prices had the effect of increasing truck transportation as distributors attempted to regain lost ground and even to secure a larger margin of profit.

Unfortunately there are no comprehensive statistics, either reliable or otherwise, available as to the quantities of lumber handled by wholesalers or retailers. According to a report of the Department of Agriculture the increasing number of wholesalers in the middle west during the first decade of the 20th century caused a shrinkage of from 50 to 60 per cent in the average volume of lumber handled by each wholesaler. It is further pointed out that the same over-expansion occurred in lumber retailing. "By 1900 Nebraska had a retail yard for every 1,485 people; Iowa a yard for 1,600 people; and Illinois, outside of Chicago, a yard for 1,720 people. From 1900 to 1915 the number of yards in these three states increased on the average nearly 26 per cent although their population increased but 7 per cent."

In view of the fact that the per capita consumption of lumber reached its zenith in 1906 at 525 feet, and steadily decreased until 1929 when it amounted to only 275 feet, and plumbed the depths to the low of 95 feet in 1932, increasing to 110 feet in 1934, it is readily understandable that with the increase in the number of units in the industry the competitive situation in the various distribution channels increased tremendously. Although there was a comparatively large volume of lumber consumed from the year 1926 through 1929, the price trend in the majority of items was downward; and while profits retreated in both the wholesale and retail branches of the industry, employees of many companies broke away and established either retail yards, wholesale businesses, or went into commission selling, and all of them took away some of the business of their former employers and materially increased the competition in the various distribution channels. This trend was growing steadily in the early part of the century and continued to increase until probably 1930, when the economic pressure of the depression caused many who had been engaged in lumber distribution to seek other vocations.

The large manufacturers of lumber have shown a decided tendency over quite a long period of years to sell their products direct through their own sales organization to retailers, railroads and industrials, and other large consumers of lumber, and, while it has been estimated that wholesalers handle approximately 60 per cent of the lumber produced, this figure cannot be substantiated for all producing areas. Direct selling by the large mills to the retailers has forced many wholesalers to seek other outlets, and they have been selling increasing quantities of lumber to contractors, both large and small, and the small contractor, particularly, has been considered by the retailer and many others engaged in the industry as the sales outlet of the retailer alone.

Although there has been this tendency of the large manufacturers to sell their products through their own sales organizations, the part played by the retailers, wholesalers and commission salesmen of lumber in the distribution of lumber is a vitally important one for the industry, and the sales volume of the industry is dependent to a major

extent on these outlets, for without the close contact with the consumer that they afford, the latter would seek and purchase, to an even greater extent than he does today, substitutes for lumber products. Decreased volume of consumption and sale of lumber would increase the per thousand feet costs and prices, and thus pyramid the competitive disadvantage. While many retailers handle substitutes and materials that are competitive with lumber, the wholesaler and commission man almost invariably handles lumber or timber products alone, and his existence is based upon his ability to dispose of these products.

The tremendous increase in the facilities of the telegraph and telephone companies, as well as the distribution of mail through the most remote areas, has brought the lumber manufacturers into much closer touch with the retail yards as well as with the ultimate consumer of lumber and has permitted the purchaser to communicate direct with the seller without having to go through the medium of the wholesaler. All of these changes in the economic life of the nation have enormously increased the competition between the various distributors of forest products.

One of the earliest problems that the Lumber Code Authority had to solve was that of the position of the wholesaler in connection with this Code. With few exceptions the general terms in the jurisdictional clause describing each division under the Code did not include wholesalers or distributors. The exceptions which included wholesalers and distributors were: The Hardwood Division; the Wholesale Distributors Division (of Millwork); the Sawed Box, Shook, Crate and Tray subdivision of the Wooden Package Division; the Oak Flooring Division; and the Veneer Division.

With the exception of the definition of the wholesaler previously quoted which occurred in Section 1 (c) of Schedule B, and reference in Section 2 of Schedule B as follows, there is no further reference to wholesalers:

> "Section 2. Wholesalers. The Lumber wholesaler is an economic factor in the distribution of lumber and it is recognized that he is entitled to compensation for his distribution services.
>
> "(a) Each division and each subdivision through its designated agency shall establish for its members and file with the Authority a schedule of maximum discounts to wholesalers for distribution services. Trade discounts when approved by the Authority shall remain in effect until changes are approved by it.
>
> "(b) As a condition of the grant of wholesale discounts, the wholesaler shall not rebate or allow any part of trade discount to any customer, or sell or offer to sell any item of lumber or timber products under the minimum prices established as provided in this code, except to another wholesaler or manufacturer; and he shall conform to all provisions of this code, as they apply to him in the sale and distribution of each species.

And under Section 5 are included certain discounts and terms of sale to govern transactions with wholesalers.

Except for these references to the wholesaler the Code contains no provision for inclusion of jurisdiction over wholesalers except for the few divisions previously mentioned which included distributors under their jurisdiction.

Shortly after the adoption of the Lumber and Timber Products Code is was conceded that the wholesalers were not bound by the rules and regulations established thereunder.

The Retail Lumber Code, when written, contained a section which encompassed jurisdiction of all carload business, but when it was sought to put this into effect such a storm of protest arose from consumers and lumbermen alike that this article was stayed, and during the life of that Code although considerable discussion was had on this subject, the stay was never lifted and, accordingly, jurisdiction over all mill sales of carload shipments of lumber remained under the Lumber and Timber Products Code.

The definition of wholesale trade and jurisdiction over wholesalers continued to be a problem to the industry throughout the life of the Code.

For a great many years prior to the Code various committees and individuals within the industry had been working on plans for a definition of wholesale trade. After the signing of the Code all activities were combined and on April 3, 1934 the Code Authority, at a public hearing, submitted certain proposals bearing on this question as Amendment No. 68. A complete record of this proposal as submitted and the objections thereto is contained in the Transcript of Hearings in the NRA files, the text of which is too lengthly to discuss specifically in this chapter. It is sufficient to remark that they included complete definitions and jurisdictional delineations for the entire Lumber Industry, and would have effected a rigid system of distribution from the producer through the wholesaler to the retailer and then to the consumer, and would have eliminated any possibility of cutting unnecessary distribution costs. In fact they would have added materially to the price of lumber to the consumer.

Numerous details of this plan were questioned or objected to by the National Recovery Administration, but the principal objection was to the establishment of the rigid distribution system, which would have meant the elimination of wholesalers who had for many years past sold direct to consumers and contractors.

As a result of a plea to the National Recovery Administration in July, 1934, by the Lumber Code Authority that conditions in regard to the distribution of lumber had become so involved that action must be taken on the distribution problem, the National Recovery Administration drew up a compromise solution with the provision that this would be approved only if the wholesalers would agree to accept the plan and come under the Lumber and Timber Products Industries Code as a wholesale

division. The National American Wholesale Lumber Dealers Association, acting for the wholesalers, refused to accept this compromise and the attempt to settle the wholesale question again failed.

Having failed to obtain approval of this plan, on July 18, 1934 the Code Authority submitted amendments 75, 76, and 77, which proposed the establishment of a wholesale division in the Lumber and Timber Products Industries Code to make effective and bind the wholesalers to the cost protection features of Article IX. Amendment 77 proposed a new definition of wholesale trade which was unsatisfactory to many wholesaler protestants at the public hearing.

On April 3, 1935 the Code Authority submitted Amendment 78, again proposing a distribution plan which, with few minor exceptions was the same as that proposed in Amendment 68.

The Code Authority finally submitted Amendment 85, which again outlined wholesale trade practically the same as the other submissions. As in the other cases cited above the objections raised by the National Recovery Administration and protestants could not be reconciled and the amendments were not approved.

Matters thus stood, until the elimination of the Codes, with the wholesalers selling more and more in competition with the mills and with the retailers through the device of cutting prices while acting as a shield for manufacturers who were violating the Code. This undoubtedly played a large part in breaking down Code prices and the Code.

CHAPTER V

FUTURE STUDIES

The purpose of this chapter is threefold: First, to set out the more important sources of serial statistical data; second, to describe briefly and evaluate each source according to its research value; and third, to point out additional serial data that would contribute greatly to a better understanding of the industry and its manifold problems. This bibliography is not exhaustive because of the limited time alloted for its completion and must not be considered as other than a preliminary guide for future research.

A. DESCRIPTION OF SOURCES OF SERIAL STATISTICAL DATA FOR THE LUMBER AND TIMBER PRODUCTS INDUSTRY

Serial statistical data for the Lumber Industry can be classified into eleven major groups which include: standing timber, number of mills, production, shipments and stocks, labor, distribution, transportation, costs,and finance, taxes, prices, and grades. Series of data pertinent to each will be discussed in the above order and will be treated in as chronological a manner as the material will permit.

In general, the available data covering many of the subjects are meager. In other instances an apparent abundance of information is only superficial as either the coverage is poor or the same basic sources have been used by several statistic-gathering agencies, each of whom revise the data according to his particular ideas or to suit special purposes for which the information is to be used.

In the preceding chapters there has been explained the widespread geographical location of this industry with its multiplicity of small units. Because of the lack of adequate bookkeeping records in these small units most of the statistics of this industry are based on the reports from the large units which are of course relatively few in number. While these units represent a large proportion of the total production, estimates based on an unknown shifting quantity, (the number of small mills operating and their production) must be made to obtain a total for the industry; or this small mill production disregarded. Either method makes the figures of doubtful value.

All secondary sources have been eliminated in the references cited in this description and the accompanying charts, except in such cases as additional information has been added or a new form of presentation had been used.

1. Standing Timber

Statistical data concerning standing timber cannot be taken currently and is not currently available, only one series having been found, The Forest Service, of the U. S. Department of Agriculture.

The Forest Service had published annual data since 1920, covering average log and stumpage prices for each of the more prominent species

and for each State, as well as summary tables. The basis of these statistics is actual stumpage and log sales from all parts of the United States as reported to the Forest Service.

The log prices are on a delivered basis which includes all costs of transporting the log from the forest to the mill. In some instances, chiefly with the more rare species such as American Walnut, the cost figures cited are not true cost of the log alone. As a result comparability of prices does not necessarily exist between different localities utilizing the same specie.

2. Number of Mills

Prior to 1904 the Decennial Census of the United States reported the number of mills covered in its canvass. Annually since 1904 the Bureau of the Census and the Forest Service have published number of mills data in conjunction with volume of lumber production.

The data gathered by the two sources are comparable, as information gathered in the Decennial Census has been made use of in the annual report. However, complete coverage was not obtained in the annual report as questionnaires were mailed only to known operating mills.

Complete coverage has not been attained in either compilation, as statistics are quoted for only those mills doing an annual business of $5,000 or over per year in the annual reports and $500 or over per year in the Decennial reports. These two sources give excellent figures for actual operating units but not for units which can operate but are not in operation.

Each trade association has more or less complete figures as to the number of mills in its particular region. The coverage is good when viewed from the volume of production represented by these mills, but coverage is much less when considering all units actually operating.

3. Production

The Decennial Census of the United States also has compiled production figures for each year in which the Census was taken. No annual data exists for the intervening years between census years until 1904, when a special census was taken. Since 1904 annual production reports have been issued by the Forest Service and the Bureau of the Census.

In 1904, and from 1906, the Bureau of the Census conducted the studies, assisted by the Forest Service. From 1913 to 1918, and in 1920, the Forest Service was responsible and since then the Bureau of the Census has gathered the material with the Forest Service cooperating.

Since 1921 the odd year reports have included not only production data on lumber, lath and shingles, but also general labor

data. In the even years under the title of "Lumber, Lath and Shingles," only production is reported. All annual lumber production data are reported by State and species.

These production figures do not represent 100 per cent. As no date are included for mills producting less than 50,000 ft. b.m. of lumber per year, no factual data exist as to what portion of production is represented by these very small mills. It is estimated to be between 5 and 10 per cent in most years.

From 1904 to 1920 except for the decennial year the Forest Service compiled "total estimated cut" based on reported cut. From 1920 to 1931 the Federal Reserve Board continued the estimates.

Lumber manufacturing associations began during the second decade to compile monthly production data gathered from members of the association. As the membership included the larger mills of the country, a substantial portion of production could be accurately accounted for.

In 1916, the National Lumber Manufacturers' Association began publishing a weekly lumber barometer based on data collected from several of the largest associations. Its sources of information have increased greatly, and for the past several years have served as a good indicator of general conditions in the lumber industry. Comparability is not possible in these figures, as identical mills are not used for continuous periods of time.

From November 1922, to September, 1928, the National Lumber Bulletin, published by the National Lumber Manufacturers' Association, carried a monthly series on production which annual total represented approximately 40 per cent of the production reported by the Census. The number of mills covered by the data varied from 489 to 705. This succeeded a "Monthly Bulletin" of the Association published from 1912 to 1918, containing monthly reports by states and regions for 10 to 13 reporting trade associations.

The Survey of Current Business has published a series of monthly statistics since 1923, based on reports submitted directly from trade associations whose members produce the more important softwood and hardwood species. Only in the case of redwood does reported production near the 100 per cent mark. Even then reported production varies from 40 to 90 per cent of capacity. (*) Total hardwood and softwood data in the Survey of Current Business are now furnished by the National Lumber Manufacturers' Association and are estimated National totals.

Seasonality and variation in the number of mills reporting each month greatly influence the utility of the above two series as shown

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(*) Survey of Current Business, 1932 supplement, footnotes.

by the monthly fluctuations.

4. Shipments and Stocks

In the National Lumber Bulletin, the National Lumber Trade Barometer, and the Survey of Current Business, previously mentioned, efforts have been made to publish assembled shipments and stock data of the trade associations. The first named published only production and shipment information, while the last two have carried stock and new and unfilled orders in addtition. The first two sources combined shipment figures from all associations and quoted them as total, while the Survey of Current Business quotes the figures on regional lines alone.

The information given by these three sources is only partial and merely indicates trends on shipments and stock. It is questionable as to how accurate the represented monthly trends are, because of wide variations in the number of mills reporting each month and the lesser variations in the representativeness of those mills which are included in the reports.

After the year 1900, the War Department began gathering tonnage figures of water-borne commerce which includes all freight leaving or arriving at all ports in the country. These statistics also includes all commerce carried on in the inland waterway systems.

The value of War Department tonnage data is not great, as all reshipment which takes place is not segregated from original shipments. For exemple, a partial cargo of lumber leaving a Southern port billed for a Northern city is also included as an outbound shipment at any port in between where the ship may put into port for the discharge of other cargo. Thus the statistics reported by this cource are somewhat exaggerated.

The United States Shipping Board has published a series on intercoastal distribution by water since 1928. The importance of this series is diminished by the fact that all lumber products such as pulpwood, cordwood, baskets, boxes, furniture, etc., are assembled under a "lumber and logs" classification.

The quarterly reports of the Lumber Survey Committee (*) quoted stock figures in addition to production. The stock figures are based on association data. No evaluation can be placed on the accuracy of the estimates, as there is no comparable information against which they may be checked.

Beginning with 1923 the Bureau of the Census has reported stocks

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(*) Appointed in 1931 by the Timber Conservation Board now reporting to Department of Commerce.

on hand at the beginning and end of the odd year. These date are comparable to production data from the same source and for this reason have considerable value.

5. Labor

Series of labor data did not appear until after 1910, when the Bureau of Labor Statistics began publishing index numbers of employment and payrolls. Following 1920, the series of employment and payroll data was published by the Monthly Labor Review. Both have been monthly series and serve only as trends, as the information does not cover identical mills and the number of mills reporting varies considerably.

The Bureau of Labor Statistics has also compiled rather extensive wage and hour data for selected years since 1920, covering sawmill workers in more than twenty states. The data have been based on full time hours and average hours. Earnings, however, are given as to the hourly rate and the actual weekly earnings of several classes of workers.

The Bureau of the Census in its Biennial Reports of "Principal Lumber Industries" publication gives very meager labor information for those establishments producing less than 200,000 ft. b.m. per year, consisting of average number of wage earners per year and total wages paid. While this eliminates a large number of establishments, its effect upon number of employees is not so great, as employment in the very small establishments is seasonal and the same workers are probably employed in other industries as well, whereas the principal employment is in the large plants and is that reported by census.

6. Distribution and Consumption

Prior to 1900 the available distribution data was that carried by Foreign Commerce and Navigation, relative to exports and imports of lumber. This source is undoubtedly one of the most accurate as the question of duties are involved.

The Pacific Lumber Inspection Bureau began gathering cargo figures from the States of Washington and Oregon, around 1910. They quote monthly cargo movements both to domestic and foreign markets by points of origin and points of destination. Due to the fact that most of the exporters in this territory make use of the services of this Bureau, its statistics are looked upon as being authoritative.

In 1928 and 1933, the Forest Service in "Lumber Used in Manufacture" gave quantities of lumber used in the manufacturing industries of the United States by species, by State of consumption, and for the even years beginning with 1926, the Forest Service has gathered valuable statistics of all lumber shipments according to States of origin and destination. This series indicates not only the interstate nature of lumber shipments but also the shift in consumptive markets.

The three large trade associations, Southern Pine, Western Pine, and the West Coast Lumbermen, and smaller associations, have published distribution data as to origin and destination. Although the information they dissiminate does not represent 100 per cent distribution from their territories, it does indicate the large markets of consumption and the direction of movement of their respective species.

The Lumber Survey Committee appointed in 1931, by the Timber Conservation Board has a quarterly series of estimated total consumption by major lumber uses which is based upon Forest Service, Census, and Trade Association data. Its contribution to statistical data relative to distribution data lies in the attempts to show 100 per cent lumber consumption and the distribution thereof.

7. Transportation.

Transportation statistics (rates) appeared in the "Timberman" shortly after 1900. This trade magazine quotes water rates on lumber from Pacific Coast ports to both foreign and domestic ports of destination.

Another source of Pacific Coast water rates appears in the publication of the Pacific Lumber Inspection Bureau.

The trade association, chiefly Southern Pine, Western Pine, and West Coast Lumbermen's, have gathered voluminous rate data concerning rates important to their respective memberships.

A fourth source of rate data are the publications of the Interstate Commerce Commission. Although this body sets and regulates all rates it is more of a repository for rate data than a primary source as its manner of operation is to hold hearings at which trade associations and others submit the information which it finally sanctions as the acceptable rates. Its great value lies in the fact that rate data are gathered at this one fountain of information.

8. Costs and Finance

Published statistical data regarding costs and finance are very meager. The Bureau of Internal Revenue in its annual "Statistics of Income" does give some information relative to total assests, liabilities, and costs for reporting corporations. While this covers a considerable portion of the industry no data are available for many thousands of small units which are unincorporated. Internal Revenue data are of a most general nature and are entirely inadequate for detailed study.

During the period from 1918 to 1931 the Southern Pine Association, the North Carolina Pine Association, the West Coast Lumbermen's Association, and the Hardwood Manufacturers' Institute published monthly per thousand feet b.m. costs of a small number of their members. These costs were shown in detail for each mill and as an average cost for all mills.

Although the cost samples are small, some degree of comparability is attainable between different sections of the country. In order to aid comparison, stumpage costs were either left out or a uniform price applied to all individual mill reports.

9. Taxes

The only serial statistical data concerning taxes appears in the Internal Revenue publication "Statistics of Income". These date back to the early part of the 1920's and refer only to corporations.

In spite of the fact that corporations have tremendous timber holdings there is a considerable portion of the industry unrepresented in this series. The cheif objection to the above data is that the amount of taxes paid is given in one lump sum which canbe segregated neither as to the particular levies under which the taxes were paid nor to the geographical distribution of the tax cost.

10. Prices

The principal published source of price data is trade publications. The sources cited in the chart of "Sources of Serial Statistical Data" are not exhaustive of the industry but have been selected as representing both an extended period of time and different sections of the country.

The Bureau of Labor Statistics has also been publishing a price indes for some time, but the items have been changed from time to time, so that the prices are of doubtful value.

In the Census of Manufactures have been published yearly since 1906, an average realized price of f.o.b. mill (per thousand feet b.m.) for each of the more prominent species of hardwoods and softwoods. These prices should not in any way be confused with the trade publication data, as Census prices made no distinction between grades or sizes. Its information is indicative of only the average per thousand feet b.m. realization to mills. Also, private statistical agencies have published information. Among these are the Davis Statistical Service and the Southern Pine Lumber Exchange. The former published monthly data from 1904 to 1931 on Southern pine prices and West Coast Lumber prices from 1918 to 1931. Since then the latter has assumed these duties for Southern Pine.

The basis of this data is individual mill sales reports of amount, grade, size, specie and price from which average prices are compiled.

This type of data is valuable only in so far as it concerns a certain number of mills. There is no way of checking how representative of the entire industry such data may be.

11. Grades

Very little serial statistical data regarding volume grades produced can be found. The Southern Pine Association did, for a

few years in the 1920's, quote quantities of each grade sold in its monthly sales reports. No recent published information can be found of Southern Pine Association authorship.

Late in the 1920's the Western Pine Manufacturers Association began publishing grade statistics compiled from sales reports of their membership. These data show the quantity of various sizes and grades sold and also the destinations of such sales. No information is available as to whether this is still in existence.

The information appears to be very good for the Western Pine, but other series covering all major species would be of great value.

12. General

In some cases, lumber statistics are inadequate, in others they are incomplete, and still others lacking in bases for comparability. There are better data available on some subjects than others. Production statistics are very good, although an abundance of price sources indicate that this subject is well covered. Such is not the case, as grades and sizes are changed so frequently in the quotations of price that it is very hard and in most cases impossible to find a series of comparable prices covering a span of several years. Objection to present data is also based on their representativeness.

The labor data cover only a few classes of labor in some cases change the bases of the data so that comparability is impossible.

In the case of shipments the coverage is small and the data can be compared only with production data in which identical mills have reported both production and shipments.

The only distribution data which are complete are information relative to imports and exports. Only in recent years have data been compiled pertinent to distribution from points of production to points of consumption. The more recent data have been gathered only for every other year and as yet a considerable portion is estimated.

Transportation data are reported partly in tonnage and partly in thousand feet b.m. The two are hard to reconcile, as species, grade, and size must be considered before a conversion figure can be determined for changing both to the same basis. No data are available for the determination of an accurate figure of conversion.

All other statistical data are of a very sketchy nature.

B. TIMBER OWNERSHIP STATISTICS (BUREAU OF INTERNAL REVENUE DATA)

In preparing the chapter on Capital and Credit in the Preliminary Report on the Economic Problems of the Lumber and Timber Products Industry, it was necessary for us to use basic data relating to a considerable group of corporations generally classed as "forest products corporations," when in fact the principal business of such corporations was other than sawmill and planing mill operations. This necessity grew out of our inability to officially establish the proper contacts with the Bureau of Internal Revenue to enable us to secure and break down the information from their files and also because the Bureau of Internal Revenue did not extend the scope of its statistical analyses to include several of the factors which we considered necessary to a complete and exhaustive study of these particular factors of the Lumber and Timber Products Industries.

The "other wood products" corporations are classified as manufacturers of carriages, wagons, furniture, baskets, etc. We are concerned with none of these except baskets, and so this group of "other wood products" corporations, consisting of more than 50 per cent of the total number of corporations classified by the Bureau of Internal Revenue, it is believed should be excluded from any study that has as its object the presentation of data in connection with sawmills, planing mills, and other wood fabricating plants integrated with sawmills.

The actual data in the files of the Bureau of Internal Revenue relating to sawmills is quite extensive and appears entirely adequate if it were possible to secure the necessary breakdown into the segments actually pertaining to the type of manufacture which we wish to investigate. This material is not only concerned with the financial status of these corporations, but also consists of a very complete collection of information in connection with the investment of the industry in standing timber. You will recall that our information as to standing timber ownership at the present time is neither relatively complete nor thoroughly reliable.

It should be borne in mind in planning for such a study of information in the files of the Bureau of Internal Revenue that such information from the financial standpoint is available only as to corporations definitely classifying themselves as being in the sawmill business. Such corporations for 1932 numbered less than 3,000. In this connection it is well to remember that standing timber areas owned by corporations whose principal business is not sawmilling would not be classified in this group, and it should be our purpose to quite thoroughly develop this particular type of information and to assemble it with the group already segregated. What has been said above as to ownership of timber lands also applies to the ownership and operation of sawmills. We also must consider that the specialized data in the files of the Bureau of Internal Revenue relating to standing timber is not confined to corporations and that from this data we can secure leads to information relating to sawmills operated by other than corporations.

As the purpose of this investigation should be to develop information concerning sawmills and standing timber, efforts should be concentrated at the beginning on an investigation of those corporations

definitely so classified and extend from that field our investigation into those other organizations that form a part of this industry.

We are particularly interested in the classification of "capital assets", especially the division between plant and equipment and standing timber. Concerning the latter we particularly wish to secure information concerning annual charges for taxes and interest as definitely related to this asset.

A very considerable quantity of this financial information has already been developed by the Bureau of Internal Revenue and is available for analysis and re-analysis. The information concerning the standing timber ownership has not been classified except roughly into geographical areas.

The re-analysis and the re-classification of the financial data would be a project not particularly difficult, nor would it be very costly. However, the proper classification after careful analysis of the data relative to the ownership of standing timber would be a project of considerable scope and would be quite costly.

You will also remember that this Division has prepared a list of the names and addresses of 1,200 of the largest sawmill operators in the country, which we had expected to use in the first planned investigation of the Bureau of Internal Revenue statistics. This list could be subjected to a special study and classification of data including both the financial and the standing timber phases. As such a study would involve a complete re-classification even of the financial data, the project would be one of considerable size and it is believed would cost a considerable sum of money to properly conclude it.

The information is available for all past years up to and including 1933 (1934 is now being classified.) It is suggested that any one of these above suggested projects should be very carefully outlined and that no one of them should be undertaken unless it was reasonable certain that data received in later years, at least through the year 1936 should be similarly assembled and classified.

Such data is believed to be invaluable to Government and industry if gathered for a particular period. If such study could include years prior to, during, and after the depression, the value would be almost incalculable.

C. TRANSPORTATION AND CROSS-HAULING

Very little has been done in this study with the subject of transportation and cross-hauling. The Chapter on "Distribution" has indirectly and briefly touched upon the volume aspect but only in so far as volume was related to specie movement and consuming centers of the more prominent species. Limited time and personnel, as well as insufficient data, prohibited an adequate study of this important subject. As a study for future consideration the following will briefly outline the major aspects of the question and indicate broad lines upon which investigation may be carried. The question of data necessary for a careful examination of the subject will also be analyzed in the later paragraphs.

It is apparent from a cursory examinationof available data that a major portion of lumber is consumed a great distance from the point of production. Considering the bulkiness of the merchandise in relation to its value, it necessarily follows that even by use of the cheapest form of transportation, considerable expense is incurred in bridging such distances.

Two broad uses exist from lumber, namely, construction and fabrication. Little, if anything ever can be accomplished toward decreasing distances between consumption and production centers of that lumber used in and for construction purposes.

The lumber fabricating industries, which consume a considerable portion of lumber, were located, at their inception, close to the source of their stocks. As the center of production shifted from the North-eastern and Lake regions to the South and far West, distances over which lumber must be shipped has increased tremendously. Fabricating plants were not moved nearer to production centers to any great extent as large sums had been invested, the major portion of which would be lost in moving the factory. One notable exception in the migration of a consuming industry is that of the Furniture Industry. It has been gradually moving from Michigan to North Carolina, which state produces large quantities of softwoods, is much nearer hardwood forests, has cheaper labor and overhead costs and borders on the ocean with its cheaper means of transportation.

Transportation and cross-hauling has been suggested as a topic for future study in order to throw light upon the increased costs of lumber due to the situation outlined above.

The study of lumber transportation resolves itself into two major aspects, namely, volume and cost. Certain investigations should be made relating to both, among which are: (a) the amount of traffic in lumber between states, (b) amount of traffic in lumber within states, (c) competition between types of carriers and the effects of such competition, and (d) the causes and effects of cross-hauling upon price. Cost and volume of transportation are so closely inter-related that great difficulty is encountered and much care must be taken in distinguishing between the effects of each upon the economic life of the lumber industry. Rather comprehensive data are necessary for an adequate study of this nature. Some information is available in usable form while some of the available data will have to be reworked.

Data essential for an adequate study will include statistics relative to the following: production, and production facilities in the various states; volume of lumber carried by rail, water and trucks, volume of lumber shipped from states to states as well as quantity distributed within states; location and types of lumber used by various fabricating industries; rate data from all important centers of production of the more prominent species to the many consuming markets; the extent and quantities of reshipped lumber; and the volume of imports along with general information as to their ultimate destination. A great deal of the required data can be obtained from existing sources. However, some will undoubtedly require reworking and supplementing.

The chief sources from which the above data may be obtained are: Bureau of the Census, Forest Service, Interstate Commerce Commission, Bureau of Railway Economics, United States Shipping Board, and the War Department.

The Bureau of the Census compiles annual production statistics by states and species within states. This information is reliable and has the best coverage for state and species statistics in existence.

Forest Service has two sets of data which would prove to be of great value in a study of transportation. One entitled "Lumber Used In Manufacture" has been published for the years 1928 and 1933. These publications show the species and quantity of lumber used in fabricating industries by industry and state. The other series is published under the title of "Lumber Distribution and Consumption." Although it is available for every other even year beginning with 1924, data for several of the years have not been published but can be obtained from the work sheets at Forest Service. These data give shipments from states to states and within each state segregated according to hardwoods and softwoods.

The Interstate Commerce Commission reports volume of rail shipments over all Class I railroads in the United States under the title of "Freight Commodity Statistics" which is available for such years. The data since January 1, 1928 have included many more classifications of freight and are therefore of greater utility.

All data are reported by railroads and by general railroad districts, which is a serious disadvantage to the study of transportation. Comparability cannot be obtained between data from previously cited sources nor is it likely that a state breakdown can be obtained without a great deal of work and expense. A second disadvantage exists in the fact that volume of transportation by rail is reported in tonnage rather than thousand feet b. m.

The Interstate Commerce Commission can also provide necessary all rate data relating to railroad freight.

The United States Shipping Board reports intercoast movements of lumber by water under the title of "United States Water-Borne Intercoastal Traffic," which is available for several years to date. This source also quotes all volume in tonnage and has an additional disadvantage in that lumber and all wood products are included under a "logs and lumber" classification. Before an adequate evaluation of this source can be made the quantity of wood products other than lumber, appearing under this title, will have to be determined.

The War Department reports annually water-borne commerce statistics entitled, "Commercial Statistics, Water-Borne Commerce of the United States," which is available both for fiscal and calendar years. It will not be of great value in its present form but basic data are in the hands of Army Engineers which could be compiled to show origin and destination of all water-borne commerce in the United States. Lack of funds have prohibited the publication of data in this form as yet.

Necessary data not covered by existing governmental statistical agencies are the data relating to truck transportation. Other than truck back-hauls this problem is pretty much confined to the movement of Southern pine lumber from the Carolina, Georgia and Virginia to Washington, D. C., Baltimore and Philadelphia. However, it is becoming quite a factor in lumber transportation in this region.

Also, data for water rates will have to be obtained from steamship companies, lumber trade associations, and other like sources.

The need for additional data other than those suggested in the preceding paragraphs will undoubtedly not be determined at this time and which can arise after the study is under way.

D. METHODOLOGY

This report is designed to analyze the problems of the Lumber and Timber Products Industry, considering the industry as a whole and in the manner in which it operated under the Code. The problems are analyzed not for each particular part of the industry but by dividing the problems into types on the basis of their origin. This method is applied to the industry as a whole except that hardwood lumber and softwood lumber are considered as representing the major portion of the industry. That part of the industry that has to do with the fabricating of lumber into other products, but which under the Lumber and Timber Products Code was considered part of the industry and that part having to do with timber products which are products of the woods but not of the sawmill have both been disregarded to the extent that their contribution to the problems, of all except standing timber have not been analyzed.

Under the problems of forest management timber and forest lands have been treated as a whole because they contributed and were the genesis of the problems of the Lumber Industry proper, whereas in dealing with the problems of production only the Lumber Industry has been treated.

The method of approach has been to divide the timber problems as far as possible into regions, merely to show the differences between one region and another. However, not all of the timber problems of a particular region have been treated. In the Lumber Industry proper an attempt has been made chiefly to divide between hardwood and softwood, and these in turn between the major divisions of hardwood and softwood, with a mere reference to the minor divisions and their contribution to the problems.

It may be seen that the industry has been treated at best only in its most outstanding aspects. A more detailed analysis is needed and should be made. Such an analysis should be on the basis of the lumber and timber products of each given area. The area should be a state, or part of a state, since various state laws contribute to the operation of the industry and its problems within the state borders. The industry should be treated within that area all the way from forest management to and all inclusive of all primary and remanufactured forest products within that area.

Under such a study a more precise analysis could be made as to obstacles to expansion and the cause of any retrogression, particularly

along the lines outlined in a research project proposed by the Harvard Bureau of Business Research and the Harvard Forest entitled "The Present Situation and Future of Timber-producing Regions as related to the Utilization of Non-virgin Timber." This project was proposed for the New England territory only. However, such a project might be designed and developed, with only slight changes, to apply to each one of the regions as shown in Section "A" of Chapter II, or where required for particular states within those regions.

After such studies have been completed it would then be possible to make a more thorough analysis of the entire Lumber and Timber Products Industry.

Attention should also be directed to a publication available in the files of NRA entitled "Scope And Status of Research In Forest Economics" (available through the courtesy of the Social Science Research Council)

APPENDIX I

EFFORTS OF THE LUMBER INDUSTRY AT PRODUCTION CONTROL PRIOR TO N. R. A.

A report prepared by A. C. Dixon, based on personal knowledge and an examination of the files of the National Lumber Manufacturers Association

You have asked me to make a study of the production control efforts of the lumber industry prior to the period of code administration. In doing this, I have thought that on account of the time limitations I should confine the study to the major divisions of the saw-milling branch of the industry on the theory that the action taken by these major divisions would furnish a satisfactory sample, and because I know that most of what the smaller groups had done was by way of following the programs of the larger ones.

I have not paid any attention to the fabricating divisions although I know that some of them operated under the so-called Stenenson Plan and that perhaps some of the others attempted to practice types of production control.

In going through the material available, I was impressed by the fact that all of the efforts to control production which attained any sizable proportions occurred subsequent to 1924. Prior to that time, it is true, there were conversations and perhaps some correspondence relative to the future possibility of the need for control, but nothing was done which could be called a serious effort.

In searching for the reasons as to why the efforts were made during the period mentioned, I ran across the following facts which seem to me to be worthy of note and as having a probable bearing on the chronology of the efforts that were made.

1. Transfer to The West of Production Supremacy.

The United States Census of Manufacturers shows that up to and including 1869, the northeastern states were the largest producers of lumber, and that in the next census period, in 1879 and the following in 1889, the lake states predominated in production, and that thereafter and until 1919, the southern states were in the lead, while late in the twenties the western states forged ahead and at the time of the census taking in 1929 and subsequent thereto, the western states have produced more lumber each year than any other area.

2. Influence Of The Panama Canal.

The Pacific Lumber Inspection Bureau for a generation has inspected and kept a record of all foreign and domestic cargo shipments from the Pacific Coast and has become a worldwide authority not only as to its

statistical record. Its records show, prior to 1914, practically no shipments to the Atlantic Coast, the total amounting to less than fourteen million feet, which would only amount to three large cargoes measured by the size of cargoes today. In 1914 these Atlantic Coast shipments jumped to thirty-four million feet; in 1915 to eighty-six million feet; during the war period the shipments were nominal but in 1921 they reached the total of two hundred and eleven million feet; in 1922 six hundred and sixty-five million feet; the next year nine hundred and twenty-five million feet; in 1924 one thousand and sixty-five million feet; in 1925 two thousand million feet; in 1926 substantially the same, and each year from 1925 to 1929, inclusive, nineteen hundred million feet or more. Two thousand million feet is the equivalent of 80,000 carloads, or sufficient to build well in excess of 100,000 five and six room residences. I believe these figures indicate that during the period referred to there was a tremendous pressure put on the Atlantic seaboard markets by the influx of West Coast lumber, and while guaging this pressure, it might be well to remember that lumber delivered by water to the Atlantic Coast ports was very often transferred to trucks or the railroads and hauled hundreds of miles inland.

3. Loss Of Earnings.

Possibly as an effect on what is recited above, and certainly a contributing cause to the desire for production control, was the steady decline in earnings during the period beginning immediately after the war. Statistics of income furnished by the Bureau of Internal Revenue give net profit or deficit of all companies reporting, and the showing covering saw-mills, considering the nearest million dollars, is as follows:

1919 - 137 profit
1920 - 179 profit
1921 - 38 deficit (this was a year of temporary depression in the construction industry.
1922 - 110 profit
1923 - 191 profit

This was the high point from which the profits dropped until in 1927 they show only as six million dollars, while in 1930, 1931, and 1932 the deficits show respectively as seventy-three million, one hundred nineteen million and one hundred and twenty-four million dollars, the amount in 1933 being equal to 32.24% of the gross income of the industry.

I have noted with interest from the records, aided by my personal recollection of what happened, that the universal desire for some type of production control developed at approximately the time when profits began to disappear. In 1925, 1926 and 1927, without having the benefit of a composite statement of the industry for any given year until the year was well past, the operators generally knew that the industry as a whole was either losing money or making only a nominal amount, while at the same time industry in other lines was reported to be paying vast amounts in profit taxes and to be in a prosperous condition. The question was frequently put as to what was going to happen to the lumber industry when other industries started to lose money, in view of the fact that when other industries were making money the lumber industry was making none.

4. Other Industry Activities Along Production Control Lines.

About this same time the oil and coal industries, independent of each other so far as I know, and independent of any action on the part of the lumber industry, were seeking production control in one way or another, both in the respective states and nationally, and it may be that what they were doing had at least a suggestive effect upon the lumber industry.

5. Railroad Building In the West.

Beginning soon after the war, there was a period of intense activity in railroad building in the far West, and the Southern Pacific, Great Northern, Northern Pacific, Union Pacific, Chicago, Milwaukee and St. Paul, as well as the Western Pacific, built many hundreds of miles of main lines, in some cases opening up vast areas of virgin timber either directly tributary to the main lines or easily made so by short branches, and on these new main lines and branches there were erected a number of new mills, some very large and, of course, adding to what was already considered a condition of overproduction.

6. Tax Intreases.

There was a notable increase in taxes paid by timber owners as well as taxes generally in the western states between 1920 and 1930. This was an era of road-building, building of new school houses and other public buildings and more or less riotous state and municipal spending. In some heavily timbered counties, the total load increased while the timber available for taxation decreased, with the resultant multiplication of the tax load and neither could the other assessed valuation carry the balance. Some of the counties have had to go into a state of bankruptcy.

Some of the above numbered paragraphs may be considered as causes, some as effects, and some as merely coincidences, but I think all are worthy of consideration as having some sort of a bearing on the various efforts later made by the industry to balance supply and demand. In gathering material for what is to follow, I have had an opportunity to look over considerable material in the files of the National Lumber Manufacturers Association bulletins, news letters, releases, etc., but mostly in the nature of private correspondence between persons in the industry, relating to the various movements that were under way at different times, and giving, in many cases, their confidential views and beliefs which they did not expect to have broadcasted either to the industry or to the public. Consequently, I have refrained in the main from using the names of individuals, but feel quite sure that if any checking is desired by some responsible person in authority, that it can be done.

It has been my intention to list the various production control efforts in chronological order. I have done so as nearly as I can but could not be entirely accurate for the reason that the movements overlapped in a number of cases, in fact, in most cases, and one was not out of the way before another began. In the main, I have put them in the order indicated by the first definite worthwhile mention in the correspondence and data I have looked over.

I. WEST COAST MERGER.

In November 1925, there had been enough thought and discussion on the proposal to merge some large West Coast timber properties so that a man prominent in the industry was asked by "West Coast people and bankers" to act as a leader in the movement, and late in that month a prominent firm of timber bond specialists and bankers in Chicago wrote a letter to an official in the industry stating that they, with one of the leading New York bond houses and one of the largest banks in Chicago, had been trying to work out a merger among fir operators in the West. The letter states that two conditions existed at that time which had never existed before and which were favorable; first, "the government attitude toward mergers", second, that "money was available beyond any sums previously thought possible." With these conditions which they mentioned, they also coupled the idea of the "depressed conditions and, therefore, psychological position of the fir operators", and reached the conclusion that "there is at least a chance to merge some of the greatest operators in the Pacific Coast."

This group (Baker, Fentress and Company, Commercial Trust and Savings Bank of Chicago, and Dillon Reed and Company of New York) spent some months of time and a great deal of money, and the lumbermen interested also spent much time and money, in working out the possibilities of the scheme. They secured the ten-year record of production, cost, sales, and net returns of a large number of companies on the Pacific Coast, estimated to have around 30% or more of the capacity of the Douglas Fir producers, to see whether or not when projected into the future, the operations of these concerns by reason of what they had shown they could do in the past, and giving consideration to expected economies and benefits to come from the merger, could from the conversion or "net avails" service the various classes of securities which it was felt necessary to issue. The general plan of this and other proposed mergers to be mentioned later, contemplated the issuance of three classes of securities. First, the operators would be paid in cash for their current assets, and first mortgage bonds would be sold to the public to provide this cash and provide working capital. Secondly, preferred stock would be issued to compensate the operators for transfer of title of their working facilities, such as saw mills, logging railroads, ships, docks, etc., and thirdly, common stock would be issued to the operators for their timber. There were, of course, variations in these plans as the bankers' group and the industry group worked together and many different tentative schemes were drawn up on paper, some mineographed and some printed, but running all through the discussions, conferences and planning, was the central thought that whatever basis the merger was formed on, the prospective income must in any event be sufficient to retire the obligations.

The first publicity as to this merger was given under a Chicago data line as early as February 6, 1926, and the indications are that this was the first publicity that was given. About this same time, the National City Bank of New York came into the picture and it was thought by some of the western operators that a better deal could be made with them than could be made with the first group mentioned, and accordingly committees were appointed to meet with representatives of this bank and tentative plans were developed approximately along the lines referred to above.

During the time the Committee of Fifteen was in existence, the thought was expressed (probably not originating with the Committee, but furthered by them) that the industry should have a director-general, and frequent comparisons were made to Brandeis and Judge Landis; the movie industry and Will Hays; and the Rubber Institute and General Andrews.

I question if it is correct to say that no beneficial results accrued from the work of this committee. I think it can be said that there were no tangible recorded results in evidence and nothing that could be set on either side of the ledger in figures, but the movement did result, especially through the drilling together of large groups of seriously interested operators, in a spread of knowledge as to the condition of the industry and must have compelled many persons to take a more realistic view of the situation them they otherwise would have taken.

The probabilities are that the committee never formally disbanded, their proposal to change the National Lumber Manufacturers Association to an institute was never carried out, there was no director-general secured, and in time the members of the regional groups turned their attention to various other plans and schemes designed to adjust production to demand. While the meetings of the larger groups above referred to were being held, and as men went home from these meetings carrying the message to their own associations and regions in some sections efforts were made to gather statistics and find out more about facts with regard to the industry, and at one time later in 1928 the Southern Pine Association had as many as eighteen men in the field attempting to secure data on the production of the small mills which did not regularly report to the association. At the same time the North Carolina Pine people were doing some of the same work. It is difficult to relate these regional activities to any particular movement but I think indications are reasonably clear that at least some of the scouting and investigating work that was done in 1928 and early 1929 was the result of the thinking of some of those who attended the meetings of the Committee of Fifteen.

III. ATTEMPTED ALLIANCE WITH COAL AND OIL.

In 1928 there came to the attention of the National Lumber Manufacturers Association the fact that there was a movement on the part of coal and oil interests to secure legislation designed to have a bearing on the production of those natural resources. There was considerable correspondence back and forth between members of the industry and with associations executives, and the industry became interested enough so that on December 6, 1928 the National Lumber Manufacturers Association passed a resolution calling attention to the fact that there were similar and additional reasons why, if oil and coal had legislation providing for "controlling production under proper safeguards" of oil and coal, or both, the legislation should also permit controlled production of lumber. When the activities of the lumbermen came to the attention of the oil people especially, they let it be known that they did not want the lumber-tail attached to their kite, and whether or not the efforts of the lumbermen were quieted down by reason of this objection, the facts are that the thought was not pursued to the point that legislation was had in behalf of lumber.

The brief recital here of this thought is not commensurate with the amount of correspondence and conferring engaged in by the lumber industry during that time, but there were no special lumber organizations brought into being to further this purpose and relatively a small amount of publicity was had.

NOTE: At this point, in order to avoid frequent repetition, it may be well to state that in all of the efforts of the industry which are recorded here and given sufficient prominence to use a numbered paragraph or chapter, there was much legal discussion on the part of attorneys of high standing in the profession concerning the legality of the various ideas and plans promoted by the industry. These attorneys were principally employed regularly by the larger operators in the industry, usually from two or three to a half dozen or more of them were assigned to jointly study the production control ideas as they came along and to advise their clients as to the legality of the proposal under consideration. At times some of these groups went entirely across the continent for the purpose of meeting with their principals or to meet attorneys who could not travel to meet them. Many written opinions are in existence as to the conclusions arrived at and, as might be expected, in a number of instances no unanimous conclusion was reached. It is probably that later on in this report it will be necessary to refer to these legal conferences or discussions but for the sakeof brevity such reference will be eliminated as much as seems expedient and the general statement will stand that the industry and its members took great care to check on the legality of every production control plant to which they gave serious consideration.

IV. DIRECTOR OF PRODUCTION.

During this period someone, I do not know who, evolved the idea that the industry should have a "director of production" to act in behalf of all firms who would sign a contract with him, and various tentative forms of contracts were proposed. One provided that the duties of the director should be (1) "to survey stocks, production, sales, demand, etc., of different companies in relation to demand and production as a whole"; (2) "to determine production necessary to maintain reasonable inventories and balance between supply and demand"; (3) "to instruct the manufacturing department accordingly." This form provided for a monthly salary for the director and, for the operator, promised that all the departments of his business would comply with instructions from the director.

About the same time various sales agency plans were written up and circulated and, if carried into effect, theoretically would have had some control of production inasmuch as the operator bound himself to sell his entire output through the sales agency and to abide by the contract for a minimum of one year, and thereafter to give at least six months of intention to cancel.

It was evidently the thought of some that if enough operators would sign this contract with the central agency that they obviously could not over-produce because the agency would not sell or offer to sell more than it could market at a reasonable price and the operator could not sell at all.

V. THE HOLDING COMPANY IDEA:

In April 1928 there was some correspondence relative to the suggestion of a leader who was a member of the Committee of Fifteen, also a member of one of the special committees selected to negotiate with the banking groups relative to the West Coast merger, as to the possibilities of a holding company modeled somewhat along the lines of public utility holding companies, with the idea that this might take the place of the merger, that it would involve less preliminary work in the way of ascertainment of values and marketing of securities, and that the holding company with lesser capital would, under the proper setup, control sales and fix policies as to production and distribution. This movement did not get under very considerable headway, probably because of the legal opinion of the lawyers who were advising this particular man and others with whom he conferred. Possibly the holding company idea could hardly be considered as a definite movement toward production control but I am citing it as showing that the members of the industry were reaching out for every possible straw.

VI. HARDWOOD CONSERVATION PLAN.

This program was apparently started in February 1928. The plan was only developed and put into effect after careful work on the part of the legal advisers and after a conference by members of the Industry

with Assistant United States Attorney General Donovan. In setting forth the plan use was made of statements made by President Hoover concerning the need for economic inquiry and facts, and what he said was quoted in part in circulars and letters which were sent out.

The plan contemplated a division of the hardwood manufacturing area into ten geographical districts, to each of which were to be assigned twelve field men whose principal work would be to gather production and stock data. Each week there was a barometer issued for each district and the statistics taken from these barometers were compiled and used in a master barometer showing production, orders and shipments for the entire industry. The theory as announced by members of the industry was that operators, knowing the exact facts as to vital statistics of the industry, could and would produce for a probable demand rather than by guess or rumor, and instances were cited of rumors relative to surplus or scarcity of stock in various areas and relative to possible new demands or falling off in demand, which rumors had been acted upon by members of the industry with disastrous results.

I find no record giving the figures as to how this plan worked out but no doubt some statistics could be gathered from officials of the Hardwood Manufacturers Institute, which has recently gone through a reorganization and will be in better shape later on than it is now to furnish any information desired. However, in some correspondence in March 1930 relative to another matter then under consideration, the president of one of the largest concerns in the country, manufacturing both softwood and hardwood, said "organization of districts in hardwood and meetings worked well until production dropped below demand and price came up a little; then the operators lost interest." In this same letter the statement was made that "Oak Flooring had a better method of reporting sales than any other and in one year, with demand 25% less than in the previous two years, they sold their production at a profit.

"In December a number of manufacturers reached the conclusion they could not stand the strain on account of a selfish disposition of others and quit cooperating. The industry then became demoralized." From this I think it will be seen the hardwood conservation plan faded out of the picture during the year 1930 and that is according to my personal recollection of what occurred at the time.

VII. WEST COAST ADVISORY PLAN.

On November 25, 1929, Colonel W. B. Greeley, former Chief Forester of the United States, and at that time secretary-manager of the West Coast Lumberman's Association, wrote to the United States Attorney General setting forth the reasons for this plan and what it was hoped to accomplish through the plan. Colonel Greeley referred, first, to the demoralized condition of the industry; second, gave some of the reasons for its over-development, such as the abundance of available timber, heavy carrying charges on the properties and overly optimistic attitude on the part of the industry on the trend of national consumption. He then referred to a combined report of a considerable group of large and small mills, covering the previous ten

years especially. This report showed a loss in six of the ten years and only a very slight gain in the other four years. Colonel Greeley also referred to public losses, such as loss in employment and lowered payrolls due to the demoralized condition of the industry. He spoke of the timber waste and the necessity on the part of the employers to use only the cream of the forests and leave to burn and waste all timber not of the best. He called attention to the fact that 60% of the remaining softwood was in the northwest region and that, therefore, the public interest had to be considered and the suggestion was that this interest would be best served by bringing about a condition of reasonable balance between supply and demand.

Colonel Greeley said in conclusion that "what we desire is to stabilize the process and avoid the extreme fluctuations in both productions and prices which have lead to demoralized conditions". The plan itself was entitled "A Plan for Advisory Statistical and Merchandising Service to West Coast Lumber Manufacturers" and was patterned after the Stevenson Plan. Without going into detail the reader will, I think, get sufficient information as to the working of the plan from this statement from the pamphlet, a copy of which was sent to the Attorney General: "The key to the advisory plan is the limitation of sales by each company over a reasonable period to its percentage of the adjusted capacity of the industry. Such a plan could not be carried out, however, without keeping production and stocks in sound balance with sales."

The letter referred to was presented in person and subsequently several efforts were made to secure a reply which was not forthcoming until January 9, 1930, when the Attorney General's office wrote refusing either to approve or disapprove the plan or advise as to changes in the plan which might be made to remove the question of its legality. In his letter he said that if the plan should be put into operation, "It seems not unlikely that the Department of Justice would find it necessary to test its legality in the courts."

In view of the attitude of the Attorney General, the West Coast Association decided in February 1930 not to give further consideration to the plan at that time. Comments were made by those of the industry who had been in close touch with the negotiations with the Attorney General's office to the effect that "it was evident the Attorney General's office felt the previous Attorney General had made too many promises and too many gestures in the direction of laxity of enforcement of anti-trust laws."

VIII. UNITED STATES TIMBER CONSERVATION BOARD.

Some time in 1928 a suggestion was made to the directors of the National Lumber Manufacturers Association that there be organized an official government committee or group or board with special reference to the lumber industry. At least some of those in association work and active in the industry at this time felt that there was merit in the idea of an official organization of this sort for the reason, first, that such a group would have the facilities for ascertainment of facts, and secondly, that the facts when put before the industry and public would have more weight and influence than if put out by private industry. Furthermore, that suggestions and advise from a

board of this character could probably be accepted by those who were so minded without the industry being charged with collusion or conspiracy to violate any statute, and that if the board found that among the difficulties of the industry was that of overproduction, they could so state and set forth the remedy in a much more authoritative way than could any other organization.

In April 1930 the directors of the lumber association approved the plan and in May of the same year it was formally presented to President Hoover. In appointing the members of the board in November 1930, the President stated, among other things, that the purpose of the board was "to develop constructive methods for dealing with this problem", the problem being "consequences of overproduction in the forest industries."

At first there were various reactions to the findings and suggestions of the board which, after its organization and as soon as the data could be assembled, issued statements indicating the necessity for a drastic reduction in inventories. Some members of the industry and some groups felt that the suggested reductions were too great, while apparently most of the industry felt that the data assembled was the best that could be secured and that the suggestions should be followed. Finally, I think it can be said that the industry almost unanimously accepted the findings of the board and to a very considerable extent complied with its suggestions, and it is a well-known fact that the industry inventory was cut very materially and approximately, from time to time, in line with the suggestions of the board.

The Lumber Survey Committee of the Timber Conservation Board, which is the statistical and fact-finding part of the organization, as originally appointed on July 9, 1931, is still serving and the membership consists of the following: Thomas S. Holden, vice-president of the F. W. Dodge Corporation, New York City; H. W. Stark, economist of Chicago; Calvin Fentress, chairman of the Board of Baker and Fentress and Company, Chicago; Phillips A. Hayward, Chief, Forest Products Division of the Department of Commerce; and Wilson Compton, secretary-manager of the National Lumber Manufacturers Association, Washington, D. C.

It has been their practice to issue a quarterly report, the first page of which was a release for the press, usually setting forth expected consumption for the current quarter with a record of reduction or additions to inventories for the year to date, or in the case of first quarter reports, for the past year. This release would indicate the relation of demand to supply and what correction, if any, was needed to bring these two factors into balance, and quite often carried some suggestions as to trade promotion and research needed, and called attention to new construction projects or new types of construction in accordance with what appeared to be the current opportunities for the lumber industry.

The body of the report, addressed to the Secretary of Commerce, usually gives first the recommendations and conclusions in a more extended form than shown in the release, and then goes on to give a

detailed analysis of consumption and stocks by regions and species.

It is the common practice of the regional associations to extract from the report the pertinent material applicable to their respective problems and to circularize their membership suggesting the advisability of compliance with the recommendations of the Board, the secretaries of the associations taking this opportunity to make their own market comments. Thus the recommendations, conclusions, suggestions, and detailed information promulgated by the board quickly passed through the various association offices and to the individual operator whom it is hoped will see the necessity for doing his part toward adjusting production to demand.

While this movement in its entirety perhaps should not be designated as an industry movement because of its being sponsored by the government, still so far as is known the industry, through the executives and directors of the National Lumber Manufacturers Association, did work up the plan, had a very great deal to do with gathering statistics and material for the use of the board and had a great influence on the industry in setting forth the merits of the idea and urging acceptance of the suggestions.

The Lumber Code Authority, in fixing the national quotas of softwood and hardwood, used as a basis the figures provided by the Timber Conservation Board in their quarterly reports. For various reasons, (such as at times the necessity for providing employment) the Lumber Code Authority did not rigidly adhere to the Board's estimates but in all cases used them as a base from which to start. There were times when subsequent to the issuance of the report and before a quota was arrived at, changes in conditions made it seem to the Code Authority advisable to depart to some extent from the Board's estimates.

IX. WEST COAST DISTRICT MEETINGS.

Throughout the material available there are more or less frequent references to efforts made on the West Coast in 1929 to lower production and a series of district meetings that were held at important producing points, such as Portland, Seattle, Gray's Harbor, Willamette Valley and others, and to a plan which was advocated whereby operators with two mills running two shifts each would discontinue one shift, thus reducing their individual production 33⅓, while single-shift mills would run five days per week, cutting their production 16-2/3. Reference is made to the dissatisfaction of labor at the single-shift mills having only five days of work per week while perhaps just across the river or on an adjoining operation on the Sound or Harbor men were working six days per week. The correspondence shows that some operators, in fact probably a majority, complied with this plan for adjustment of production but that a few large operators "who never co-operated" would not lend any help to the idea, which put the issue up to the others as to whether they wanted to "hold the umbrella" over the others. I know from personal contact of these meetings, having attended many of them, that there were no minutes kept and any detail relative to the meetings and the results would have to be secured from correspondence files or recollection of the participants.

The attempt to secure voluntary cooperation looking toward the adjustment of production continued off and on, and while other ideas and plans were being worked on, until we were well into the depression, and then production and other factors connected with the operation of the industry were regulated by the necessities of the individuals more than by anything else until the code period.

X. THE COMPTON PLAN

Early in 1930 the attention of the industry was called to proposals made by Dr. Wilson Compton setting forth "A course of action for the lumber industry in the orderly control of lumber production and supply", and advance copies of the written proposal were circulated among a few members of the industry prior to its delivery by Dr. Compton at a meeting of the board of directors of the National Lumber Manufacturers Association in Chicago on April 24, 1930. The promise was set forth in the statement that what is needed are (1) wider markets and uses for lumber and (2) better control of supply, and a proposal was made involving the ascertainment of facts relative to production and "expected production" and indicating methods which might be used for the securing of facts and for making use of these facts. As to the latter, it was suggested that there be (1) regular monthly meetings in each important lumber manufacturing locality or wholesale center; (2) the formation of logical regional groups for the collective consideration of "production quotas".

The suggestion involved the dividing of the United States into several geographical sections, originally intended to be five in number, and the selection of eight to twelve meeting points in each district or locality, with a chairman selected in each locality, with arrangements being made for regular meetings which would be arranged for and handled as to all details by local people with representatives of the national association in attendance, not to lead in the program but to give those present the benefit of economic analysis that had been made of what was going on in the country at large, and to bring in reports of the experience or the lack of it at other meetings of like character.

This address of Dr. Compton also made direct mention of the method of securing orderly control of production through the employment of a director of production, which idea has heretofore been discussed.

Subsequent to the meeting of May 24, two large committees were appointed by the National Lumber Manufacturers Association directors, one to "suggest plans for securing orderly control of lumber production and distribution" and the other to "consider ways and means for broader cooperation with retailers * * *." About this time, because of the interest that seemed to be taken in Dr. Compton's plan, a strong legal committee was appointed, consisting of the lawyers employed by several of the largest firms in the industry. Just prior to the meeting of April 24 referred to above, one of the Del Monte meetings was held on April 15 and an effort was made to bring up Dr. Compton's plan and discuss it at that meeting in lieu of any other progress, but matters did not work out that way.

The special committees appointed in April met in Chicago on June 11

and 12, 1930, and considerable effort was put forth in order to get the men who were considered to be leaders in the industry to attend the meeting. One of the largest producers whose presence at the meeting was considered essential, indicated his willingness to attend it on any date which was open on his calendar, but he said beforehand that he thought the plan would not work, that when lumber, by reason of control of production or any other reason, was up in price, there would be an increase in the number of mills; when it went down the new mills would become inactive again and that this process would be repeated from time to time. This man had every reason to wish that some plan could be found which, when put into operation, would improve the situation, but seemed to have a hopeless attitude and as a matter of fact, that sort of attitude pervaded the industry at that time and still does, as could be shown by a number of reams of correspondence.

Another large operator and one who had been a leader in various industry movements, said at the conclusion of a lengthy letter, "It is going to be necessary for us to find some legal way to secure control of production and sales policies." This is only a sample of any number of extracts which could be taken from letters written by industry members and this and similar quotations are only dropped into this narrative to show that the industry had its mind continually on this problem.

The resolution adopted at the special committee meetings on June 11 and 12 were equivalent almost to a complete endorsement of Dr. Compton's plan and provided for, first, a system of reports and surveys related to supply and demand, lumber consumption and volume of production necessary for supply and demand to balance. Second, regular monthly meetings at "perhaps forty to fifty designated convenient points * *", and further approved the appointment of a special committee to work out the mechancis. Some other resolutions were passed relative to sales agencies, and then a resolution that the president of the association should appoint a special committee to be authorized to secure counsel to make an intensive study of "the possibilities of reduction in the number of producing units * * * being a merger through holding companes * * * in order to permit necessary economies in production, conservation, etc." This committee was authorized to report at a subsequent meeting. There was some considerable publicity given to this movement in newspapers of general circulation and more space given by trade papers. The Chicago Journal of Commerce of June 3, 1930, carried an article headed "Lumber Group To Discuss Supply and Demand Relations"; "The Development within this industry of means of encouraging closer adjustment of the supply of lumber to the demand will be discussed by a special committee of directors of the National Lumber Manufacturers Association to be held June 11 and 12, etc."

To show the fear in the minds of some as to anything that might have the color of a violation of the anti-trust act, some of the leading and most active men in the industry took exception to even this much publicity and one leader threatened to withdraw from any association activities.

A plan for the gathering of statistics and the holding of meetings

was finally approved and the work started. Meetings were held at least at many points throughout the country and regularly at many of the manufacturing centers. Probably no one was entirely satisfied with the results and business generally, immediately subsequent to this period, was getting into a worse condition with the lumber industry probably declining faster than almost any other. I do not know whether it can be said that the working of the machinery of the Compton Plan stopped at any certain date or whether a better statement would be that in these various meetings many other subjects of interest were discussed by the assembled lumbermen, and the statistics gathered were such as were made use of by the National Lumber Manufacturers Association in its regular statistical program and service, and that probably this plan gradually merged into matters having to do with the Timber Conservation Board statistical work and recommendations and merged into the regular association activities.

XI. THE HARDWOOD EFFORT.

During the spring and early summer of 1930, according to correspondence passing at that time, the hardwood people were more depressed that at any other time, had overly large inventory, and the statement was made that it would take a forty-five day shut down to balance stocks. In May and before the Compton Plan got under way, the hardwood industry was holding a series of meetings in an effort to ascertain the facts and make the operators see that they should limit their production. There is little information available here as to the number of these meetings or the period of time covered, but it is indicated that they later merged into the type of meeting provided for in the Compton Plan.

Again showing the continuity of thought on this subject, the following quotation is from an article by B. C. Forbes in the New York Herald Examiner, of July 26, 1920, in which he writes relative to conditions in the West where he was then travelling, saying with regard to the lumber industry; "The bane of this industry is gross overproduction * * *."

XII. FEDERAL ACQUISITION.

During the summer of 1931 and perhaps earlier, there began to be discussion of a suggestion that the Federal government re-acquire the "excess overload of privately owned timber reserves." The suggested plan was formally incorporated in a "memorandum on proposals for improvement of the lumber industry situation" written by Dr. Compton during 1931 and circulated among members of the industry. Letters back and forth between operators and timber owners on this subject were quite plentiful and the timber referred to was frequently designated as "distress" timber, "menace" timber, etc. The industry generally seemed to accept the idea. One member writes that the acquisition program would be a "wonderfully good thing for the industry." The objectors were exceedingly few in number and only two or three persons recorded any definite objection, and it is evident that they did not understand the program and it is known that some of them have since changed their views.

The president of the National Lumber Manufacturers Association at that time, in a letter to one of the directors, said on October 9, 1931,

"I have yet to discuss this idea with any operator, or anyone actively interested in the industry, who did not approve it." The thought as proposed in Dr. Compton's memorandum, referred especially to virgin timber in the Northwest, since that is where the largest remaining stand of such timber exists. A very large southern operator, in September 1931, writing relative to the matter of production, said, "The problem * * * is with the West", and goes on to say that we will have to correct the blunder made there in getting "too much timber and too many facilities in private industry", and points out that the West will have to correct that situation, that "it is little the rest of us can do."

Some years prior to this period, there had been authorized, through an act of Congress, the formation of the National Forest Reservation Commission consisting of three Cabinet officers, two Senators and two Representatives who, working with the Chief Forester of the United States, could establish Purchase Units and re-acquire forest lands or lands suitable for forest propagation.

Not by reason of legal requirements, but as a matter of policy, until recently the Reservation Commission has confined its activities to the eastern part of the country and very largely to the purchase of cut-over lands. The commission has spent or has authorized the expenditure to date of something in excess of $60,000,000 and further appropriation and expenditures are expected. Recently the commission has indicated a change in policy and has authorized some purchases in the far West and authorized the investigation of other possible purchase areas.

In 1933 the so-called Copeland Report, Senate Document No. 12, consisting of well over 1000 pages and covering a great many, if not all phases of the lumber industry, was issued and one of the outstanding recommendations was that this matter of acquisition be carried on because of the inability of private owners to carry this "menace" or "distress" timber, and pointing out the evils accruing from forced liquidation.

Article X of the Lumber Code made provision for the appointment by the Secretary of Agriculture of a joint committee, representing the government and the industry, to study conservation measurers and problems. This committee met in October 1933, again in January 1934, spending a number of days at its task, and issued a printed report wherein it recommended as one of the things to be done, the acquisition and control by the government of that portion of the timber of the country which cannot be carried by private industry with satisdactory results to the industry or to the public interests involved. The correspondence shows that the acquisition program was discussed with President Hoover and also with the President Roosevelt. The Copeland Report and also the report of the conference appointed by Secretary Wallace above referred to, were both approved by the Secretary of Agriculture, and it is generally understood that President Roosevelt has approved both in principle.

In a recent letter (September, 1935) from President Roosevelt to Governor Martin of the State of Oregon, the following paragraphs occurred: "It now seems evident that passage to private ownership of so much of the most acceptable productive forest land in Oregon had aggravated rather than simplified the problem of permanent forest management. It will be necessary, as you suggest, to restore to public ownership a great deal of forest land that unwisely was allowed to pass into private control,

and to create conditions under which private ownership of forest resources may be constructive rather than destructive. Arrangements to that end which clearly would contribute to the permanent public interest and could not be capitalized to private advantage deserve sympathetic consideration.

"Legislation to create an organic basis of the Federal forest program continues to command my interest, but so many vital matters have claimed the attention of the Congress during the present session that I have hesitated to urge consideration of the forestry legislation (for sustained yield management). It is my hope that it can receive attention early in the next session."

Conferences between representatives of the industry and of the Department of Agriculture indicate that the legislation referred to will probably contemplate the providing of a bond issue to finance timber purchases or the issuance of bonds in direct payment for such purposes in a sufficient amount to take out of private ownership enough surplus timber so that the pressure for hurried liquidation will be removed and the industry, with government cooperation, can then proceed to the marketing of the forest products of the country in an orderly and fairly well regulated manner and, where possible, that operations will be on a "sustained yield" basis, that is, as to any given unit of timber of any size, production will only be carried on at a rate equivalent to natural replacement by growth, the theory being that the government, when it has added to its present holdings the so-called "distress" timber will resell it to those who operate on a sustained yield basis only so fast as the market demands the product, thus tending to stability in the industry and permanency of payrolls and communities established for forestry and lumber producing operations.

It is contemplated by industry and Administration people who have discussed this subject at great length that the program, if carried out, would, in addition to the obvious benefits to the industry and the public at large, be a profitable undertaking for the government and that whatever sums are provided should and can be returned to the government with interest, administrative charges and profit.

The question might be asked as to why the government should purchase more timber when it already has such a large percentage of the virgin timber in the most heavily timbered states, and, if this ownership in Oregon and Washington, for instance, (amounting to approximately 45% of all standing softwood timber), does not provide sufficient stabilization, how any addition to this amount would provide increased stability. At least a partial answer would lie in the explanation that generally speaking, privately owned timber is the most accessible, having been selected very largely because it was accessible, being near deep water, or navigable streams or railroads, while the timber belonging to the Forest Service and the Interior Department is further back and not so available to the market. On a flat map one body of timber might appear to be as accessible as another, while on a contour map the facts are more clearly brought out, and it will be observed that in many cases large bodies of timber can be approached only from one direction and, by reason of the typography and accessibility to transportation, there exist many key tracts which, if acquired by the government, would control very considerable areas which the government would not have to purchase. It is true that no one had advocated any attempt at entire control and it is realized that there will be bodies

of timber scattered throughout the producing area that are not large enough or in other respects suitable to be included in sustained yield units. Also there will be some large operators especially who will not desire to dispose of any of their holdings and it is thought that these people, one of whom controls in excess of 5% of the softwood production of the United States, would as a matter of self-interest, act in harmony with the government in attempting to regulate the amount of timber furnished the mills to the approximate expected consumption. The small mills would be to some extent uncontrollable, but the volume of their production as shown by all the records, is relatively small and by reason of small volume and also because the small scattered operations do not produce the high grade of material, their influence on the markets, if not inconsequential, would be relatively unimportant.

Estimates made by the government and private interests over the last five or six years indicate that in the ten forest regions into which the Forest Service has divised the timber holdings of the government, which regions comprise all of the timber areas of the United States, probably $350,000,000 to $500,000,000 would be required to complete a satisfactory acquisition program, and a period of from five to seven years would be needed to properly select the tracts and complete the purchases.

There is evidence to indicate that the acquisition idea originated with the industry, consequently it is listed as an industry activity directed toward production control and, if it can be placed in this category, it remains, I believe, the only active movement now in force looking toward anything like a permanent solution of this problem.

XIII. WISCONSIN STABILIZATION AGREEMENT.

The first notice that I have found of this agreement was dated August 1931 and the plan was put into effect in that year and generally considered by the participants to have been successful. The Wisconsin State Journal, in a news item, referred to "Lumbermen's Plan to Maintain Jobs." The correspondence and arguments in behalf of the plan which were put out in mimeographed form show that the industry in Wisconsin, notwithstanding a falling off in business in 1930, continued to produce at nearly a normal rate for the sake of keeping employment as high as possible with the hope that by doing this they could shorten the depression. In 1931 conditions were worse and a survey as of July 1st of that year showed two years' supply of lumber at the then rate of demand, which demand was considered to be approximately one-third of normal. The employers then gave consideration to the general situation as it affected them and their employees. A report of the State Tax Commission issued about this time showed the sawmills in Wisconsin earned 3% of their capitalization in 1928, with a small return in 1929, but lost in 1930 more than the earnings of the previous years.

Considering the rate of production and consumption at this time the employers feared complete stagnation with severe depletion of capital assets and possibly almost total unemployment in the industry. During this period consideration was given by the Wisconsin operators to what was being done by other industries, such as coal and oil, and possibly to interstate and state pacts of one type or another, the possibility of

of relief from state and Federal anti-trust laws, (the Wisconsin anti-trust law being more severe than the Federal law) and statements were made that the public as well as private interests demanded that something be done. There was a series of consultations and conferences with the State governor's industry advisers and the reports indicated a sympathetic attidute on the part of state officials.

The plan or agreement when finally written provided, (1) the signing by the operators of an agreement to produce during the period prior to July 1, 1932, at each of the mills, 28% of the average production for the years 1927, 1928 and 1929, and not produce more or less than this figure except for good reasons. The thought behind this arrangement was that demand at the time was approximately 30% of normal for the three years used, that by producing not more than 28% there would be at least no increase in inventories, and it was desired that the operators produce at least 28% for the sake of employment.

(2) A committee of seven manufacturers was to be chosen by the signers of the agreement and this committee would have the right to say whether any individual operator had shown good reason why he should be allowed to vary from the agreed upon percentage of production.

(3) The committee of seven was to collect statistics relative to production and if increase in demand developed could increase the percnetage above 28%, or could end the agreement.

(4) In order to protect the public's interest and keep within reasonable limits from the public viewpoint, there was to be a public policy committee of five not connected with the industry. This committee was appointed by the governor and consisted of one banker, the dean of the Agriculture College of the University of Wisconsin, a University economist, a man formerly president of the Retail Lumbermen's Association (assumed to protect the customers' interests), and one State official, the secretary of the State Industrial Accident Commission. The public policy committee was to meet with the committee of seven and the State Department of Agriculture and Markets to offcer and receive suggestions and to counsel with this department and had the power to declare the agreement at an end and to withdraw state support whenever the committee thought public interest was not being promoted.

(5) The powers of the committee of seven were qualified by a provision that this committee could not increase or decrease the percentage of industry production or end the agreement without the consent of the Public Policy Committee.

The record shows that the legal advisers of the state officials said that the plan was not illegal, that it was reasonable, there was no penalty provided, that it was constantly under the inspection of the State Department of Agriculture and Markets, and that the dean of the College of Agriculture would protect the farmers' interests, and that others on the committees would protect all public and private interests, and that because the Wisconsin and Michigan producers together were responsible for less than 5% of the nation's production, they could not be charged with being a monopoly. The Michigan producers did not sign the Wisconsin agreement but worked along a less publicized line of their own which con-

templated production on a slightly higher basis, probably 32% of the average of the three years chosen. The Michigan operators, however, while not signing this same agreement, did furnish their statistics to the committee of seven and in return were furnished statistics showing the results attained. The plan was enough in favor with the public and the legislators so that there was proposed a new chapter to the statutes of Wisconsin, being Chapter 109, with suggested headings, such as "Stabilization of Employment;" "Equitable Distribution of Employment", etc. Public statements were made as to the stabilization plan and its effect and apparently all considerations were carefully weighed but the proposed legislation was not enacted into law, losing by one vote. The statute would have exempted industries in the state from the state anti-trust laws under certain guarded conditions.

Such reports as are available, which consist of correspondence between members of the industry, and members of the industry and association executives, indicated that the result of the first year's operation was up to expectations, that is, the production in Wisconsin was approximately as anticipated, between 28% and 29% of the average used, while in Michigan it was slightly higher but not enough to disturb the situation. Losses were not entirely checked but were lessened in amount and it was upon the basis of the showing of this first year that the proposed legislation was introduced. The plan and the record of its working were sent to other districts and studied in other production areas and in other states, and was then generally considered to be the most advanced and successfully operated plan yet proposed. The plan was in operation up until the discussion of NRA and the possibility of codes began, but there is no record available here as to just how and when the transfer was made from the stabilization plan to the code plan.

XIV. INTERSTATE COMPACTS.

During the period between and including 1931 to 1933, there was a great deal of study by lawyers selected for that purpose and by members of the industry of state anti-trust laws and of state and interstate compacts, and in this discussion study, which was not, however, confined to the lumber industry, the lumbermen had a considerable part at about that time. In other industries, state legislators passed bills attempting to control production but I find no record of any of this legislation directly affecting the lumber industry or made use of by the industry or made use of by the industry although some members thereof felt at times that something had to be found which could be made use of.

XV. SOUTHERN PINE CURTAILMENT PLAN.

Correspondence dated in September 1931 between members of the industry in the South, refers to a committee of five with an outstanding operator as chairman, having met in New Orleans on Tuesday previous to calling a meeting of lumber executives for September 18 and 19. The letter carries the statement that it is proposed that "manufacturers produce at least 10% less lumber than they ship in any three months' period in order to overcome surplus stocks." The letter further states that the writer feels this reduction is not drastic enough and from statements made deploring any "attempt at government control", it is

probable that the effort and the meetings referred to may have been connected with the desire of the Southern Pine Association to cooperate with the plan of the Timber of the Conservation Board. Up until about this time the Southern Pine Association had been exceedingly careful to avoid any connection with any movement designed to control or affect production and the executive officers of the association frequently stated their attitude in this regard.

At least one of the reasons for this attitude is found in the charter of the Southern Pine Association from the State of Missouri, one paragraph of which reads "but none of said purposes shall be deemed or construed to hold any suggestion that control of the amount of production of lumber be in any way affected or attempted." A letter of July 31, 1931, from an association executive to a member of the industry states in connection with the expressed desire to assist the Timber Conservation Board in its efforts that "it happens that the Southern Pine Association has called a number of district meetings among the small mills to discuss the situation which confronts them. From reports we have received, these smaller operators are about to become more active, and it is felt that they should be acquainted with all facts concerning the present condition of the industry."

Essential features of the idea that was being carried out by the Southern Pine Association at that time had to do very largely, if not entirely, with control of inventories and it is entirely probable that the work that was done was not only in line with previously conceived ideas of the Southern Pine Association people, but fitted in very sell with the plan of the Timber Conservation Board. The Southern Pine territory, for the purpose of gathering statistics, was divided by state lines into seven districts. The operators were individually asked to make an estimate of the amount of stock that each shall carry on the basis of a supposed normal demand, such as existed in 1928, the demand being the sales of the individual operator, and then to ascertain what percentage relationship existed between the normal stock and the demand or sales of 1928 and to project this percentage into the current period, attempting to keep the stocks at the same percentage of current sales as they were to the sales of 1928. For illustration, the total known stocks as estimated by the operators in 126 operations for 1928 were 683 million feet; the total sales or demand for this same period was 3,307 million feet, the budgeted normal stocks being, therefore, 20.66% of the demand. The demand in 1931, of course, was very much less than in 1928, amounting to only 1,785 million feet, and the desire was to bring the inventories down to 20.66% of that amount. The plan apparently worked out with varying degrees of success and, by those who cooperated and put into effect, was and still is considered sound. Reports late in 1932 showed in the previous four months a decline in stocks of 31% of uppers, and 52% of lower grades, which developed shortages in some items and the estimate was made that the plan had worked so well unsold stocks were then at 10% below normal, total reduction among the mills reporting of 483 million feet between January 1 and October 1, 1932 was indicated. The plan was in effect up until the beginning of the agitation for an NRA code.

XVI. ECONOMIC TRUCE.

In March 1932, there began to be agitation among a number of industries, including machinery, textile, food, lumber, and others, for relief from the anti-trust acts. In the lumber industry the motivating force was the desire to control production and the idea seemed to many lumbermen, as well as those in other industries, to be so fair, so easy to put into effect, and so beneficial to the public as well as to private interests, it seemed as though the entire industry had concentrated on this idea. At least two types of control were thought of, one, a commission to be appointed by the President, and the other a joint committee to consist of five members of the House of Representatives and five Senators. The discussions and conferences finally reached the point where a bill was introduced in the Senate, S. J. Resolution 87, by Senator Steiwer. This bill provided for a joint congressional committee of five members of the House of five members of the Senate "which shall investigate and report to the Congress its findings and recommendations whether amendments should be made to the anti-trust laws", and provided in Section 2 thereof that "until said committee shall have reported its findings and recommendations to the Congress and Congress shall have acted thereon", nothing contained in the various anti-trust acts which are enumerated "shall be construed to apply to agreements between competitors in the natural resource industries for the purposes of regulating production, conserving natural resources, and maintaining continuity and stability of employment * * unless such agreements are contrary to the public interest." Natural resources industries were defined to include those engaged in the production of minerals and forest products, while Sections 3 and 4 referred to the administration of the Act by the Federal Trade Commission. The resolution was never passed but later the substance of it was incorporated in an amendment to another bill, which amendment never became law.

XVII. FIR STABILIZATION PLAN.

The first mention I find of this proposed plan was early in 1932 when it had attained sufficient importance in the minds of industry and others so that Governor Meier of Oregon and Governor Hartley of Washington joined in an effort to have the Attorney General or Congress approve a plan permitting an agreement among operators to not sell below a standard cost and the two governors also joined in a telegram to President Hoover. The interest of the states were said to have arisen because of the shipping out of these states of a tax-paying natural resource without any taxable returns and reference was made to waste of natural resources, the effect on employment, and other factors. The plan provided for the forming of a corporation which would (1) establish minimum standard costs; (2) regulate production month by month to what the markets would absorb; (3) cooperate with the government to keep within all laws. A statement was made in the press that the President stated that the government would cooperate in every possible way and one of the ways that cooperation was expected was through a test case. The 4-L Lumber News of July 15, 1932, stated that the industry was desperate and a prominent operator heavily interested in the South and West said in the same month that "the time for quibbling over legal technicalities has passed * *." This and similar industry expressions bears out the

theory of desperation referred to in the news item above.

The form of organization required that subscribers to stock in the corporation subscribe in proportion to their relative production. The stock would not be delivered but was held in escrow, and failure to comply with the agreement as to not selling below standard cost might result in a penalty or fine which would be taken from the funds deposited for payment of the stock.

Industry members had deficulty in agreeing to the features to be incorporated in the plan, some good sized tariff fights having sprung up between members of the industry, industry attorneys rendered adverse legal opinions, and for these and perhaps other reasons the plan was dropped without the corporation actually being formed. It may be noted that this plan with its attempt to fix a standard cost below which operators should not sell and the various other plans providing for certain percentages of former production and the like, were very similar to the ideas incorporated in the Lumber Code covering prices and production.

XVIII. FIR MERGER.

In the summer of 1931, some large western operators again brought forth the idea of the possibility of a fir merger and a plan was written up and given the name of the author, discussed at some length in the industry and to some extent with the banking fraternity, but beyond occupying the attention of a number of people in the industry for some few weeks or months, did not amount to anything.

Recent news in various trade journals and other publications, supplemented by the observations of an executive in the Forest Service who has recently made a two months' trip throughout the producing sections of the West, indicate that there is an increasing number of new small mills, and mills both large and small which have been shut down for a number of years, now coming into production, quite a few of them by reason of loans from the Federal Reserve Bank and from the Reconstruction Finance Corporation, ranging in amounts up to several hundred thousand dollars. The 4-L Lumber News of October 1, 1935, says that for several weeks lumber production has been "creeping upon orders and shipments." It states also that employment in camps and mills in the best in a decade and adds that "it is hoped that uncontrolled production will not spoil this improved situation."

Recent lumber statistics show in some weeks an excess of production covering the entire United States of a much as 10% over shipments or sales. The question, it seems to me, naturally arises as to whether or not the industry will shortly be forced to seek other and perhaps new methods of controlling production and whether or not, in the absence of the ability to find such methods, the industry will not again find itself in about the situation it was at the beginning of the code era.

October 29, 1935.

APPENDIX II

TABLES & EXHIBITS

9813"

TABLE - I COMMERCIAL FOREST AREA OF THE UNITED STATES, BY REGIONS, STATES, CLASSES OF OWNERSHIP, AND CHARACTER OF GROWTH. 1/

(Thousand Acres)

Region and State	All Classes of Ownership: Total	All Classes: Saw Timber Areas 3/	All Classes: Cordwood Areas 4/	All Classes: Restocking: Fair to Satisfactory	All Classes: Restocking: Poor to Non-restocking	Industrial Ownership 2/: Total	Industrial: Saw Timber Areas 3/	Industrial: Cordwood Areas 4/	Industrial: Restocking: Fair to Satisfactory	Industrial: Restocking: Poor to Non-restocking	Farm Woodland: Total	Farm: Saw Timber Areas 3/	Farm: Cordwood Areas 4/	Farm: Restocking: Fair to Satisfactory	Farm: Restocking: Poor to Non-restocking	Public Ownership: Total	Public: Saw Timber Areas 3/	Public: Cordwood Areas 4/	Public: Restocking: Fair to Satisfactory	Public: Restocking: Poor to Non-restocking
New England																				
Connecticut	1,582	209	889	347	137	895	123	501	197	74	600	78	340	126	56	87	8	48	23	8
Maine	14,490	10,177	1,279	2,175	859	11,819	8,602	986	1,618	613	2,241	1,278	252	491	220	450	237	41	68	24
Massachusetts	3,255	470	1,063	1,235	487	2,157	318	690	833	316	863	115	291	313	140	235	33	82	90	30
New Hampshire	4,435	998	694	1,967	776	2,876	642	352	1,365	517	1,072	115	230	502	225	487	241	112	100	34
Rhode Island	279	14	70	140	55	145	7	37	73	28	122	6	30	59	27	12	1	3	6	2
Vermont	3,232	1,992	848	281	111	1,684	1,142	275	193	74	1,504	831	557	80	36	44	15	16	7	2
Total	27,273	13,860	4,843	6,145	2,425	19,576	10,834	2,841	4,279	1,622	6,402	2,427	1,700	1,571	704	1,255	599	302	294	100
Middle Atlantic																				
Delaware	320	32	268	13	7	86	9	72	3	2	234	23	196	11	4	-	-	-	-	-
Maryland	2,168	500	1,395	176	97	863	196	545	72	50	1,275	296	830	108	41	30	8	20	1	1
New Jersey	1,973	294	610	687	382	1,523	132	470	545	376	354	149	101	75	29	96	13	39	31	13
New York	9,593	4,637	2,816	1,376	764	5,808	2,918	1,590	770	530	3,718	1,708	1,217	574	219	67	11	9	34	13
Pennsylvania	13,085	1,831	5,429	3,746	2,079	7,190	477	3,408	1,957	1,348	3,880	1,292	1,269	955	364	2,015	62	752	860	341
Total	27,139	7,294	10,518	5,998	3,329	15,470	3,732	6,085	3,347	2,306	9,461	3,468	3,613	1,723	657	2,208	94	820	926	368
Lake																				
Michigan	19,000	1,750	2,550	9,877	4,823	12,947	1,209	1,363	6,915	3,460	3,760	450	1,085	1,524	701	2,293	91	102	1,433	667
Minnesota	20,200	1,630	2,690	10,670	5,210	12,178	490	546	7,426	3,716	4,746	653	1,239	1,955	899	3,276	487	905	1,285	599
North Dakota	495	10	110	252	123	50	-	50	-	-	430	10	60	247	113	15	-	-	10	5
Wisconsin	16,200	1,705	3,530	7,367	3,598	5,617	932	1,267	4,944	2,474	5,345	680	2,223	1,673	769	1,238	93	40	754	351
Total	55,895	5,095	8,880	28,166	13,754	34,792	2,631	3,226	19,285	9,650	14,281	1,793	4,607	5,399	2,482	6,822	671	1,047	3,482	1,622
Central																				
Illinois	3,196	2,481	540	123	52	250	100	70	57	23	2,942	2,377	470	65	30	4	4	-	-	-
Indiana	3,438	1,815	1,090	374	159	810	192	266	252	100	2,615	1,620	814	124	57	13	3	10	-	-
Iowa	2,358	1,755	581	15	7	152	120	32	-	-	2,206	1,635	549	15	7	5/	5/	-	-	-
Kentucky	10,296	2,767	4,441	2,169	919	5,141	1,790	1,905	1,035	411	5,136	971	2,528	1,123	514	19	6	8	3	2
Missouri	16,500	3,165	6,735	4,636	1,964	9,376	1,889	3,880	2,581	1,026	7,076	1,269	2,836	2,040	933	46	7	19	14	6
Ohio	4,651	2,736	1,519	278	118	1,686	916	611	114	45	2,894	1,774	867	160	73	71	46	21	3	1
Tennessee	14,041	5,067	7,170	1,267	537	7,642	3,005	3,936	502	199	6,071	1,858	3,113	755	345	328	204	121	2	1
West Virginia	9,769	1,438	3,516	3,382	1,433	6,262	751	2,236	2,344	931	3,216	654	1,235	911	416	291	33	45	145	68
Total	64,249	21,224	25,592	12,244	5,189	31,319	8,763	12,936	6,885	2,735	32,158	12,158	12,432	5,193	2,375	772	303	224	167	78
South																				
Alabama	21,680	7,427	4,407	4,538	5,308	14,791	4,950	3,006	3,034	3,801	6,522	2,281	1,348	1,436	1,457	367	196	53	67	[illegible]
Arkansas	22,000	7,700	7,000	3,365	3,935	15,051	5,818	3,857	2,386	2,990	5,931	890	3,143	942	956	1,018	992	-	15	11
Florida	23,600	6,030	6,921	4,908	5,741	20,739	5,525	5,930	4,121	5,163	2,266	265	901	546	554	595	240	90	151	114
Georgia	22,672	6,900	7,566	3,874	4,532	13,637	4,172	4,547	2,183	2,735	8,966	2,557	2,967	1,708	1,734	269	171	52	26	20
Louisiana	17,922	7,383	2,459	3,724	4,356	14,851	6,157	2,032	2,957	3,705	2,999	1,218	401	685	695	72	8	26	22	16
Mississippi	18,293	5,067	2,446	4,969	5,811	12,007	3,282	1,531	3,193	4,001	6,264	1,778	914	1,773	1,799	22	7	1	8	6
North Carolina	20,216	4,192	7,890	3,749	4,385	10,077	2,360	3,782	1,747	2,188	9,739	1,659	3,997	2,026	2,057	400	173	111	66	50
Oklahoma	4,279	1,800	784	781	914	3,734	1,668	445	715	896	490	132	329	14	15	55	-	-	31	24
South Carolina	12,415	3,757	3,947	2,171	2,540	7,979	2,811	2,325	1,262	1,581	4,393	917	1,613	925	938	43	29	9	3	2
Texas	12,624	4,150	3,700	2,200	2,574	9,618	3,260	2,340	1,784	2,234	3,000	885	1,360	375	380	6	5	-	1	-
Virginia	14,857	2,859	5,582	2,957	3,459	6,914	1,488	2,419	1,335	1,672	7,296	1,147	2,816	1,654	1,679	647	224	347	43	33
Total	190,758	57,265	52,702	37,236	43,555	129,398	41,491	32,224	24,717	30,966	57,866	13,729	19,789	12,084	12,264	3,494	2,045	689	433	327
Pacific Coast																				
California	17,538	12,587	306	1,813	2,832	8,754	5,634	230	1,077	1,813	60	-	-	28	32	8,724	6,953	76	655	1,040
Oregon	28,638	19,675	3,815	2,087	3,261	10,581	7,674	815	779	1,313	3,140	1,087	567	684	802	15,117	10,914	2,433	684	1,086
Washington	20,309	11,878	2,562	2,290	3,579	8,603	3,859	1,125	1,348	2,271	1,899	653	361	407	478	9,807	7,366	1,076	527	838
Total	66,685	44,140	6,683	6,190	9,672	27,938	17,167	2,170	3,204	5,397	5,099	1,740	928	1,119	1,312	33,648	25,233	3,585	1,866	2,964
North Rocky Mountain																				
Idaho	17,464	9,964	1,964	3,422	2,114	3,380	1,550	344	834	652	807	286	50	259	212	13,277	8,128	1,570	2,299	1,280
Montana	14,865	7,062	3,740	2,511	1,552	2,545	1,640	372	299	234	606	78	259	148	121	11,714	5,344	3,109	2,094	1,167
Total	32,329	17,026	5,704	5,933	3,666	5,925	3,190	716	1,133	886	1,413	364	309	407	333	24,991	13,472	4,679	4,393	2,447
South Rocky Mountain																				
Arizona	3,651	3,614	-	3	34	42	42	-	-	-	-	-	-	-	-	3,609	3,572	-	5	32
Colorado	12,516	7,839	3,651	88	938	2,579	985	1,247	6	341	-	-	-	-	-	9,937	6,854	2,404	82	597
Nevada	377	201	95	7	74	177	97	77	-	3	-	-	-	-	-	200	104	18	9	69
New Mexico	3,806	3,710	-	8	88	1,092	1,018	-	1	73	-	-	-	-	-	2,714	2,692	-	3	19
South Dakota	1,284	675	586	2	21	310	140	165	-	5	-	-	-	-	-	974	535	421	2	16
Utah	3,348	2,432	378	46	492	310	46	33	4	227	43	34	3	5	1	2,995	2,352	342	37	264
Wyoming	5,588	4,270	1,249	6	63	588	416	161	-	11	-	-	-	-	-	5,000	3,854	1,088	7	51
Total	30,570	22,741	5,959	160	1,710	5,098	2,744	1,683	11	660	43	34	3	5	1	25,429	19,963	4,273	145	1,048
Eastern Regions	365,314	104,738	102,535	89,789	68,252	230,555	67,451	57,312	58,513	47,279	120,168	33,575	42,141	25,970	18,482	14,591	3,712	3,082	5,302	2,495
Western Regions	129,584	83,907	18,346	12,283	15,048	38,961	23,101	4,569	4,348	6,943	6,555	2,138	1,240	1,531	1,646	84,068	58,668	12,537	6,404	6,459
All Regions	494,898	188,645	120,881	102,072	83,300	269,516	90,552	61,881	62,861	54,222	126,723	35,713	43,381	27,501	20,128	98,659	62,380	15,619	11,706	8,954
Region and State	All Classes of Ownership: Total	Saw Timber Areas 3/	Cordwood Areas 4/	Restocking: Fair to Satisfactory	Restocking: Poor to Non-restocking	Industrial Ownership 2/: Total	Saw Timber Areas 3/	Cordwood Areas 4/	Restocking: Fair to Satisfactory	Restocking: Poor to Non-restocking	Farm Woodland: Total	Saw Timber Areas 3/	Cordwood Areas 4/	Restocking: Fair to Satisfactory	Restocking: Poor to Non-restocking	Public Ownership: Total	Saw Timber Areas 3/	Cordwood Areas 4/	Restocking: Fair to Satisfactory	Restocking: Poor to Non-restocking

1/ Figures taken from U. S. Forest Service release entitled "Commercial Forest Area of the U. S. by Regions, States, Classes of Ownership, and Character of Growth," with the exception of the State break own of "Restocking" areas into "Fair to Satisfactory" and "Poor to Non." This was done by applying the regional percentage relationship of fair to satisfactory and poor to non-restocking in Table III, page 131 of "A National Plan for American Forestry," to the totals of restocking and non-restocking areas for individual States as given in Forest Service release entitled "Commercial Forest Area of the U. S. by Regions, States, Classes of Ownership, and Character of Growth."
This table includes land capable of producing commercial timber of commercial quantity and quality, and available for commercial use, at the close of 1930. The figures are not thoroughly reliable; they, however, embrace the best available data, checked by the judgment of well-informed men.
2/ Owned by land, lumber, pulp and paper, and mining companies, naval stores operators, railroads and miscellaneous individuals and agencies.
3/ Characterized by trees large enough for saw logs regardless of their actual use.
4/ Characterized by trees too small for saw logs but large enough for cordwood use, regardless of whether the stand is cut for cordwood or held for saw timber.
5/ Less than 500 acres.

TABLE 11.- TOTAL STAND IN UNITED STATES ON SAW TIMBER, CORDWOOD AND RESTOCKING AREAS. 1/

(Million Cubic Feet)

Area and State	Total Area			Saw Timber Area 2/			Cordwood Area 3/			Restocking Area
	Total 4/	Softwood 4/	Hardwood 4/	Total 5/	Softwood 6/	Hardwood 6/	Total 5/	Softwood 7/	Hardwood 8/	Total 9/
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
New England										
Connecticut	1,299	468	831	264	105	159	936	144	492	99
Maine	15,199	5,481	9,718	12,867	5,137	7,730	1,172	306	666	1,160
Massachusetts	1,609	580	1,029	560	224	336	926	242	684	123
New Hampshire	2,880	1,038	1,842	1,767	705	1,062	894	233	661	219
Rhode Island	55	21	54	21	8	13	57	15	42	7
Vermont	4,158	1,900	2,658	2,714	1,084	1,630	1,127	294	833	317
Regional Total	25,230	9,098	16,132	18,193	7,263	10,930	5,112	1,334	3,779	1,925
Middle Atlantic										
Delaware	366	65	301	45	11	34	288	36	252	33
Maryland	1,993	359	1,635	563	144	419	1,249	155	1,094	181
New Jersey	976	174	802	309	79	230	579	72	907	88
New York	10,118	1,800	8,313	5,964	1,521	4,443	3,237	403	2,834	917
Pennsylvania	9,196	1,637	7,559	2,410	615	1,795	5,953	740	5,213	833
Regional Total	22,649	4,032	18,618	9,291	2,370	6,921	11,306	1,406	9,900	2,052
Lake										
Michigan	8,898	1,823	7,075	4,580	1,081	3,499	4,318	1,311	3,007	10/
Minnesota	5,634	2,540	3,094	2,590	611	1,979	3,044	925	2,119	10/
North Dakota	95	-	95	17	-	17	78	-	78	10/
Wisconsin	6,923	1,447	5,476	3,257	769	2,488	3,666	1,113	2,553	10/
Regional Total	21,550	5,810	15,740	10,444	2,461	7,983	11,106	3,349	7,757	10/
Central										
Illinois	1,933	131	1,802	1,596	105	1,491	219	15	204	118
Indiana	1,474	100	1,374	1,096	72	1,024	288	20	268	90
Iowa	558	38	520	403	26	377	121	9	112	34
Kentucky	3,955	268	3,687	1,707	113	1,594	2,007	140	1,867	241
Missouri	5,305	360	4,945	1,741	115	1,626	3,239	225	3,014	325
Ohio	3,084	209	2,875	2,124	140	1,984	771	53	718	189
Tennessee	8,836	599	8,237	4,061	268	3,793	4,235	295	3,940	540
West Virginia	5,511	375	5,136	1,986	131	1,855	3,158	222	2,966	337
Regional Total	30,656	2,080	28,576	14,714	970	13,744	14,068	979	13,089	1,874
South										
Alabama	10,179	5,810	4,369	7,353	3,593	3,760	2,121	1,296	825	705
Arkansas	14,226	8,121	6,105	8,518	4,788	4,030	4,423	2,702	1,721	985
Florida	9,242	5,275	3,967	5,389	2,924	2,465	3,213	1,963	1,250	640
Georgia	15,084	8,610	6,474	6,930	3,790	3,130	7,059	4,312	2,747	1,045
Louisiana	12,093	6,903	5,190	9,858	5,353	4,505	1,398	854	544	837
Mississippi	8,014	4,574	3,440	6,012	3,265	2,747	1,447	884	563	555
North Carolina	14,981	8,551	6,430	6,356	3,452	2,904	7,588	4,636	2,952	1,037
Oklahoma	2,005	1,144	861	1,407	764	643	459	281	178	139
South Carolina	10,433	5,955	4,478	6,047	3,284	2,763	3,664	2,238	1,426	722
Texas	7,633	4,357	3,776	4,949	2,687	2,262	2,155	1,315	839	529
Virginia	9,921	5,663	4,258	4,069	2,210	1,859	5,165	3,155	2,010	687
Regional Total	113,811	64,963	48,848	67,238	36,512	30,726	38,692	23,637	15,055	7,881
Pacific										
California	50,076	50,076	-	49,491	49,491	-	11	11	-	574
Oregon	81,429	81,110	319	76,688	76,411	277	3,807	3,775	32	934
Washington	60,227	59,990	237	56,522	56,318	204	3,013	2,988	25	692
Regional Total	191,732	191,176	556	182,701	182,220	481	6,831	6,774	57	2,200
North Rocky Mountain										
Idaho	25,290	25,290	-	21,161	21,161	-	2,682	2,682	-	1,447
Montana	22,478	22,478	-	[illegible]	[illegible]	-	6,732	6,732	-	1,287
	[illegible]	[illegible]	-	[illegible]	[illegible]	-	[illegible]	[illegible]	-	-,734
South Rocky Mountain										
Arizona	3,626	3,626	-	3,625	3,625	-	-	-	-	1
Colorado	12,451	12,427	24	11,250	11,250	-	1,192	1,168	24	9
Nevada	220	220	-	182	182	-	37	37	-	1
New Mexico	2,921	2,921	-	2,919	2,919	-	-	-	-	2
South Dakota	912	912	-	719	719	-	192	192	-	1
Utah	2,330	2,330	-	2,235	2,235	-	93	93	-	2
Wyoming	10,863	10,863	-	9,719	9,719	-	1,136	1,136	-	8
Regional Total	33,323	33,299	24	30,649	30,649	-	2,650	2,626	24	24
Eastern U. S. Total	213,896	85,982	127,914	119,880	49,576	70,304	80,284	30,705	49,579	13,732
Western U. S. Total	272,823	272,243	580	248,970	248,489	481	18,888	18,495	78	4,958
United States Total	486,719	358,225	128,494	368,850	298,065	70,785	99,172	49,521	49,658	17,690
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Area and State	Total 4/	Softwood 4/	Hardwood 4/	Total 5/	Softwood 6/	Hardwood 6/	Total 5/	Softwood 7/	Hardwood 8/	Total 9/
	Total Area			Saw Timber Area 2/			Cordwood Area 3/			Restocking Area

1/ The U. S. Forest Service, which is responsible for the basic figures used, claims only relative accuracy for them. It states, however, that they embrace the best available data, checked by the judgment of well-informed men of the different regions. The figures represent the period at the close of 1930.

2/ Saw Timber denotes areas characterized by trees large enough for saw log production regardless of their actual use.

3/ Cordwood denotes areas characterized by trees too small for saw logs but large enough for cordwood use, regardless of whether the stand is cut for cordwood or held for saw timber.

4/ Regional totals in columns 1 to 3, inclusive, are taken directly from table 6, page 184 (column entitled "Total Area") in "A National Plan for American Forestry. State totals in column 1 are arrived at as follows: State totals of column 4 are added to respective state totals of Column 7. Regional totals of column 4 are added to corresponding regional totals of column 7. The ratio of the sum of respective state totals to the sum of corresponding regional totals is applied against the regional total of column 1 to calculate the total for any state in that column. Example (a). Column 4 (Conn.) 264, Column 7 (Conn.) 936, 1,200 (b) Column 4 (Regional total) 18,193, Column 7 (Regional total) 5,112, 23,305 (c). 23,305 / 1,200 = 5.149% (d). 5.149% X 25,230 = 1,299 (Connecticut total column 1)

State totals in column 2 were arrived at as follows: any state in column 1 : regional total of column 1 :: corresponding state total in column 2 : regional total of column 2. Example: To determine softwood total for Connecticut in column 2 — 1,299 : 25,230 :: X : 9,098 X = 468 State totals in column 3 equal the difference between respective state totals of column 1 and those of column 2. Exceptions to these methods are the Lake States and the State of California. In the former case the available statistics are not sufficiently detailed to permit any consideration of restocking areas although such areas are known to exist in the Lake area. The Forest Service reports no hardwood on saw timber and cordwood areas in California; it is therefore assumed that there is no hardwood on restocking areas in that state.

5/ Taken from the last two columns of an unpublished table furnished by the U. S. Forest Service, entitled "Commercial Forest Area of the U. S., Stand of Saw Timber and Total Stand on Saw Timber and Cordwood Areas, by States and Regions" and hereinafter referred to as the "Master Table.

6/ Regional totals equal the sum of regional totals under the first four main headings in table 6, page 184 ("A National Plan for American Forestry"). Example (New England): Saw timber 5,183, Small trees 1,082, Tops and limbs 736, Other 260; regional total for New England (column 5) 7,263. State totals are arrived at by the same method as employed for columns 2 and 3.

7/ Regional totals are arrived at by deducting regional totals in column 4 from corresponding totals in column 1; deducting regional totals in column 5 from corresponding totals in column 2; ascertaining the ratio of the second difference to the first and applying this ratio to the corresponding regional total in column 7.

8/ Figures of column 7 minus corresponding figures in column 8.

9/ Regional totals equal the sum of corresponding totals of the column headed "Cordwood and Restocking Areas" in table 6, page 184 ("A National Plan for American Forestry") minus the stands for respective regions as "Cordwood Areas" shown in the Master Table. State totals are arrived at by deducting the sum of corresponding totals in columns 4 and 7 from those of column 1.

10/ Restocking areas are known to exist in the Lake Region, but available statistics are not sufficiently detailed to permit segregation of such areas.

TABLE III STAND OF SAW TIMBER IN THE UNITED STATES BY REGIONS, STATES, AND CLASSES OF OWNERSHIP 1/

(Million feet board measure, lumber tally)

Region and State	ALL CLASSES OF OWNERSHIP			PRIVATE							FEDERALLY OWNED OR MANAGED							STATE, COUNTY AND MUNICIPAL		
				Industrial 2/			Farm Woodland				National Forest			Other						
	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Total	Softwood	Hardwood	Total	Softwood	Hardwood				
New England																				
Connecticut	730	79	651	702	430	46	384	272	30	242	-	-	-	-	-	-	-	28	3	25
Maine	39,790	29,738	15,018	38,657	34,719	21,601	13,118	3,938	2,490	1,448	52	52	33	19	-	-	-	1,081	668	393
Massachusetts	2,042	1,473	569	1,898	1,379	995	384	519	374	145	-	-	-	-	-	-	-	144	104	40
New Hampshire	6,956	4,397	2,559	5,831	4,895	3,094	1,801	936	992	944	1,067	1,067	674	393	-	-	-	58	37	21
Rhode Island	91	89	62	88	49	16	33	39	12	27	-	-	-	-	-	-	-	3	1	1
Vermont	8,305	2,101	6,205	8,217	5,949	1,505	4,444	2,268	573	1,695	-	-	-	-	-	-	-	89	23	66
Total	57,875	38,831	25,064	55,393	47,421	27,257	20,164	7,972	4,031	3,941	1,119	1,119	707	412	-	-	-	1,363	816	547
Middle Atlantic																				
Delaware	107	36	71	107	29	10	19	78	26	52	-	-	-	-	-	-	-	-	-	-
Maryland	1,274	205	1,069	1,254	501	81	420	753	123	632	-	-	-	-	-	-	-	20	3	17
New Jersey	857	323	534	823	305	115	190	518	195	323	-	-	-	-	-	-	-	34	13	21
New York	18,013	6,535	11,480	17,950	11,320	4,109	7,213	6,636	2,407	4,229	4	-	-	-	4	1	3	59	20	39
Pennsylvania	5,857	1,146	4,711	5,691	1,676	326	1,350	4,015	780	3,235	94	94	18	76	-	-	-	112	22	90
Total	26,150	8,845	17,305	25,831	13,831	4,639	9,192	12,000	3,529	8,471	98	94	18	76	4	1	3	221	58	163
Lake																				
Michigan	16,430	3,450	12,980	16,345	12,928	2,715	10,213	3,417	734	2,699	85	85	18	67	-	-	-	-	-	-
Minnesota	8,580	3,434	5,146	8,492	2,500	1,000	1,500	5,992	1,997	3,995	1,219	1,104	442	662	115	46	69	869	348	521
North Dakota	53	-	53	53	-	-	-	53	-	53	-	-	-	-	-	-	-	-	-	-
Wisconsin	10,884	2,309	8,575	9,843	6,343	1,353	4,990	3,500	747	2,753	960	11	2	9	949	207	742	1	y/	1
Total	35,947	9,193	26,754	32,733	21,771	5,068	16,703	12,962	3,062	9,900	2,264	1,200	462	738	1,064	253	811	870	348	522
Central																				
Illinois	3,134	14	3,117	3,124	123	1	120	3,001	13	2,990	5	-	-	-	5	y/	5	2	y/	2
Indiana	2,182	17	2,165	2,181	108	1	107	2,073	16	2,057	-	-	-	-	-	-	-	1	y/	1
Iowa	1,107	-	1,107	1,107	77	-	77	1,030	-	1,030	y/	-	-	-	y/	-	-	-	-	-
Kentucky	5,574	734	4,840	5,562	3,765	496	3,269	1,797	236	1,561	-	-	-	-	-	-	-	12	2	10
Missouri	3,689	289	3,400	3,683	2,557	199	2,358	1,146	90	1,056	-	-	-	-	-	-	-	6	y/	6
Ohio	4,194	51	4,143	4,135	1,220	15	1,205	2,915	35	2,880	-	-	-	-	-	-	-	59	1	58
Tennessee	9,683	1,164	8,519	9,290	5,854	701	5,153	3,436	463	3,041	369	369	45	324	-	-	-	24	3	21
West Virginia	5,062	631	4,431	4,996	2,951	369	2,582	2,033	263	1,770	75	75	9	66	-	-	-	3	y/	3
Total	34,625	2,900	31,722	34,086	16,613	1,782	14,831	17,453	1,058	16,395	449	444	54	390	5	y/	5	107	6	101
South																				
Alabama	21,476	16,799	4,677	20,666	14,157	11,830	2,327	6,509	5,364	1,145	274	254	202	52	20	16	4	236	187	49
Arkansas	24,170	11,343	12,827	22,728	20,244	9,501	10,743	2,484	1,165	1,319	1,442	1,442	677	765	-	-	-	-	-	-
Florida	15,312	13,169	2,143	15,141	14,430	12,410	2,020	711	612	99	171	171	147	24	-	-	-	-	-	-
Georgia	20,870	14,817	6,053	20,472	12,794	9,083	3,711	7,678	4,451	3,227	398	398	283	115	-	-	-	-	-	-
Louisiana	28,590	12,884	15,706	28,579	23,935	10,776	13,159	4,644	2,108	2,536	5	5	2	3	-	-	-	6	3	3
Mississippi	20,481	12,960	7,521	20,466	12,457	7,870	4,587	8,009	5,081	2,928	-	-	-	-	-	-	-	15	9	6
North Carolina	19,443	11,073	8,370	18,745	13,591	6,601	6,990	5,154	4,074	1,080	698	503	287	216	195	111	84	-	-	-
Oklahoma	3,542	2,469	1,083	3,542	3,362	2,334	1,028	180	126	54	-	-	-	-	-	-	-	-	-	-
South Carolina	16,462	9,357	9,105	18,359	14,692	7,447	7,245	3,667	1,858	1,809	103	103	52	51	-	-	-	-	-	-
Texas	16,165	11,759	4,406	16,149	13,065	9,504	3,561	3,084	2,243	841	-	-	-	-	-	-	-	16	12	4
Virginia	11,086	4,829	6,257	10,770	6,163	2,684	3,479	4,307	1,789	2,518	777	777	339	438	-	-	-	39	17	22
Total	199,797	121,449	77,848	195,117	146,450	89,840	57,410	48,267	29,666	18,602	4,868	4,663	1,989	1,664	215	127	88	312	228	84
Pacific																				
California	282,460	282,460	-	177,051	177,051	177,051	-	-	-	-	105,169	102,751	102,251	-	2,918	2,918	-	240	240	-
Oregon	437,852	435,534	2,318	233,601	216,896	215,747	1,149	16,705	16,617	88	203,668	152,638	151,830	808	51,030	50,760	270	583	580	3
Washington	323,736	320,915	401	183,250	174,749	174,532	217	8,501	8,490	11	132,734	102,109	102,181	128	10,485	10,412	13	25,334	25,300	32
Total	1,044,628	1,038,909	2,719	593,902	568,696	567,330	1,366	25,206	25,107	99	421,571	357,498	356,262	936	64,373	64,090	283	26,155	26,120	35
North Rocky Mt.																				
Idaho	96,592	96,592	-	28,020	26,917	26,917	-	1,103	1,101	-	59,621	48,275	48,275	-	1,346	1,346	-	8,551	8,951	-
Montana	49,796	49,796	-	13,711	13,306	13,306	-	405	405	-	33,509	30,565	30,565	-	2,944	2,944	-	2,576	2,576	-
Total	146,388	146,388	-	41,731	40,223	40,223	-	1,508	1,506	-	93,130	78,840	78,840	-	4,290	4,290	-	11,127	11,527	-
South Rocky Mt.																				
Arizona	19,827	19,827	-	120	120	120	-	-	-	-	19,597	14,059	14,059	-	5,538	5,538	-	110	110	-
Colorado	47,379	47,378	1	2,435	2,435	2,435	y/	-	-	-	44,727	38,251	38,251	y/	6,476	6,476	y/	237	237	y/
Nevada	778	778	-	448	448	448	-	-	-	-	330	228	228	-	102	102	-	-	-	-
New Mexico	14,389	14,389	-	4,296	4,296	4,296	-	-	-	-	9,962	9,028	9,028	-	534	534	-	531	531	-
South Dakota	3,208	3,208	-	228	228	228	-	-	-	-	2,965	2,910	2,910	-	93	93	-	15	15	-
Utah	7,791	7,791	-	265	201	201	-	64	64	-	7,474	7,283	7,283	-	191	191	-	52	52	-
Wyoming	32,584	32,584	-	1,744	1,744	1,744	-	-	-	-	30,328	28,158	28,158	-	2,170	2,170	-	512	512	-
Total	125,956	125,955	1	9,536	9,452	9,452	y/	64	64	-	114,983	99,917	99,917	y/	15,066	15,066	y/	1,457	1,457	y/
East	353,831	174,998	179,233	343,140	246,486	128,186	118,300	96,654	41,346	55,309	7,818	6,510	3,230	3,280	1,308	381	927	2,873	1,456	1,417
West	1,313,972	1,311,252	2,720	645,149	618,371	617,005	1,366	26,778	26,679	99	629,681	545,555	545,019	536	83,729	83,446	283	39,139	39,104	35
All Regions	1,667,803	1,485,250	181,953	988,289	864,857	745,191	119,666	123,432	68,024	55,408	637,502	552,065	548,249	4,216	85,037	83,827	1,210	42,012	40,560	1,452

Region and State	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood
	ALL CLASSES OF OWNERSHIP			Industrial 2/			Farm Woodland			PRIVATE	National Forest			Other			STATE, COUNTY AND MUNICIPAL		
				PRIVATE							FEDERALLY OWNED OR MANAGED								

1/ Figures taken from U. S. Forest Service release entitled 'Stand of Saw Timber in the United States by Species, States, and Classes of Ownership,' with the exception of the breakdown into 'Softwoods' and 'Hardwoods' for individual classes of ownership. This was done by applying the percentages of 'Softwoods' and 'Hardwoods' to 'Totals' under the heading 'All Classes of Ownership,' to the totals under individual classes of ownership. This table includes trees large enough for lumber production regardless of their actual use. The figures are not thoroughly reliable; they, however, embrace the best available data, checked by the judgment of well-informed men.

2/ Owned by land, lumber, pulp and paper, and mining companies, naval stores operators, railroads, and miscellaneous individuals and agencies.

y/ Less than 500 thousand feet.

3/ Includes one million feet B.M. for Colorado, which is not classified according to type of ownership.

TABLE IV STAND PER ACRE OF SAW TIMBER AREAS 1/

States	ALL CLASSES OF OWNERSHIP			PRIVATE OWNERSHIP									PUBLIC OWNERSHIP		
				TOTAL			INDUSTRIAL			FARM WOODLAND					
	Total Saw Timber Area (M. Acres)	Total Saw Timber Stand (M.M. feet B.M.)	Average Stand Per Acre (Feet B.M.)	Total Saw Timber Area (M. Acres)	Total Saw Timber Stand (M.M. feet B.M.)	Average Stand Per Acre (Feet B.M.)	Total Saw Timber Area (M. Acres)	Total Saw Timber Stand (M.M. feet B.M.)	Average Stand Per Acre (Feet B.M.)	Total Saw Timber Area (M. Acres)	Total Saw Timber Stand (M.M. feet B.M.)	Average Stand Per Acre (Feet B.M.)	Total Saw Timber Area (M. Acres)	Total Saw Timber Stand (M.M. feet B.M.)	Average Stand Per Acre (Feet B.M.)
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
New England															
Connecticut	209	730	3,493	201	702	3,493	123	430	3,496	78	272	3,487	8	28	3,500
Maine	10,177	39,750	3,906	9,880	38,457	3,913	8,602	34,719	4,038	1,278	3,738	3,041	297	1,093	3,680
Massachusetts	470	2,040	4,345	447	1,998	4,343	118	1,779	4,716	329	219	4,361	23	41	4,304
New Hampshire	938	6,956	6,970	757	5,811	7,703	642	4,895	7,625	115	536	4,139	181	1,145	4,668
Rhode Island	14	91	6,500	13	88	6,769	7	49	7,000	6	39	6,500	1	3	3,000
Vermont	1,992	8,306	4,170	1,953	8,231	4,213	1,142	5,549	4,859	851	2,682	3,152	39	85	4,564
Total	13,800	57,875	4,176	13,261	55,393	4,177	10,634	47,421	4,377	2,427	7,972	3,285	599	2,482	4,143
Middle Atlantic															
Delaware	32	107	3,344	32	107	3,344	3	29	9,222	23	78	3,391	—	—	—
Maryland	500	1,274	2,548	492	1,254	2,549	196	501	2,556	296	753	2,544	8	20	2,500
New Jersey	294	857	2,915	281	823	2,929	132	305	2,311	148	518	3,477	13	34	2,615
New York	4,657	18,015	3,885	4,626	17,956	3,882	2,918	11,320	3,879	1,708	6,636	3,885	11	59	5,364
Pennsylvania	1,831	5,897	3,221	1,769	5,691	3,217	477	1,676	3,514	1,292	4,015	3,107	62	206	3,322
Total	7,294	26,150	3,585	7,200	25,831	3,588	3,732	13,831	3,706	3,468	12,000	3,460	94	319	3,394
Lake															
Michigan	1,750	16,430	9,389	1,659	16,345	9,852	1,209	12,928	10,693	450	3,417	7,593	91	85	934
Minnesota	1,690	8,580	5,264	1,143	6,482	5,670	456	2,400	5,102	663	3,992	6,113	547	2,068	3,287
North Dakota	10	53	5,300	10	53	5,300	—	—	—	10	53	5,300	—	—	—
Wisconsin	1,705	10,824	6,348	1,612	9,843	6,106	932	6,343	6,806	680	3,500	4,147	93	981	10,548
Total	5,095	35,867	7,044	4,424	32,733	7,399	2,611	21,771	8,775	1,793	10,962	6,114	671	3,134	4,700
Central															
Illinois	2,481	3,131	1,262	2,477	3,124	1,261	100	121	1,210	2,377	3,003	1,263	4	7	1,750
Indiana	1,815	2,182	1,202	1,812	2,161	1,204	192	108	563	1,620	2,073	1,280	3	1	333
Iowa	1,795	1,107	631	1,795	1,107	6,308	120	77	642	1,675	1,030	630	2/	3/	—
Kentucky	2,767	5,574	2,014	2,761	5,552	2,011	1,720	3,765	2,203	971	1,787	1,840	6	12	2,000
Missouri	3,165	3,389	1,166	3,158	3,683	1,166	1,889	2,537	1,343	1,269	1,146	903	7	6	857
Ohio	2,776	4,194	1,511	2,695	4,115	1,527	914	1,200	1,312	1,774	2,915	1,643	46	59	1,283
Tennessee	5,067	9,683	1,911	4,863	9,290	1,910	3,005	5,834	1,941	1,858	3,456	1,860	204	393	1,926
West Virginia	1,438	5,062	3,520	1,405	4,984	3,547	751	2,941	3,929	654	2,033	3,108	33	78	2,364
Total	21,284	34,622	1,631	20,921	34,066	1,628	8,743	16,613	1,896	12,158	17,453	1,436	303	556	1,835
South															
Alabama	7,427	21,176	2,851	7,231	20,666	2,858	4,950	14,157	2,860	2,281	6,509	2,853	196	510	2,602
Arkansas	7,700	24,170	3,139	6,708	22,728	3,388	5,819	20,284	3,485	890	2,444	2,791	992	1,442	1,454
Florida	5,030	16,312	2,539	5,790	15,141	2,615	5,525	14,430	2,611	265	711	2,683	240	171	712
Georgia	6,950	20,870	3,024	6,729	20,472	3,042	4,172	12,798	3,067	2,557	7,674	3,003	221	398	2,527
Louisiana	7,383	28,930	3,872	7,375	28,579	3,875	6,157	23,915	3,884	1,218	4,664	3,829	8	11	1,375
Mississippi	5,067	20,481	4,042	5,060	20,466	4,045	3,282	12,437	3,789	1,778	8,029	4,516	7	15	1,875
North Carolina	4,192	19,443	4,638	4,019	18,745	4,664	2,360	11,591	4,911	1,659	7,154	4,312	173	698	4,035
Oklahoma	1,800	3,542	1,968	1,800	3,542	1,968	1,668	3,362	2,015	132	180	1,364	—	—	—
South Carolina	3,757	15,462	4,114	3,728	15,339	4,114	2,811	11,784	4,192	917	3,555	3,877	29	103	3,552
Texas	4,190	16,165	3,855	4,145	16,149	3,896	3,260	13,065	4,008	885	3,084	3,485	5	16	3,200
Virginia	2,839	11,086	3,878	2,695	10,270	3,898	1,488	6,163	4,142	1,147	4,107	3,581	224	816	3,643
Total	57,265	199,297	3,480	55,220	195,117	3,533	41,491	146,850	3,539	13,725	48,267	3,516	2,043	4,180	2,046
Pacific															
California	12,587	282,460	22,441	5,834	177,053	31,485	5,834	171,051	33,425	—	—	—	6,953	106,809	15,360
Oregon	19,675	457,852	22,854	8,761	233,601	26,664	7,674	218,896	28,524	1,087	16,705	15,367	10,914	224,251	18,714
Washington	11,878	321,316	27,051	4,512	183,250	40,614	3,859	174,749	45,283	653	8,501	13,018	7,366	138,066	18,743
Total	44,140	1,061,628	23,958	18,907	593,902	31,412	17,367	564,696	33,127	1,740	25,206	14,486	25,233	467,726	17,744
North Rocky Mountain															
Idaho	9,304	34,592	3,494	1,856	28,020	15,241	1,650	26,937	17,346	206	1,103	5,357	6,178	66,572	8,446
Montana	7,062	49,796	7,051	1,738	13,713	7,861	1,640	11,306	8,113	78	405	5,192	5,324	36,085	6,752
Total	17,026	146,388	8,598	3,554	41,731	11,742	3,190	40,223	12,610	284	1,508	4,142	11,472	104,657	7,764
South Rocky Mountain															
Arizona	3,614	19,627	5,486	42	120	2,857	42	120	2,857	—	—	—	3,572	19,707	5,517
Colorado	7,439	47,179	6,344	985	2,415	2,452	985	2,415	2,452	—	—	—	6,854	44,764	6,530
Nevada	201	778	3,871	97	448	4,619	97	448	4,619	—	—	—	104	330	3,173
New Mexico	3,710	14,389	3,878	1,018	4,296	4,220	1,018	4,296	4,220	—	—	—	2,692	10,093	3,749
South Dakota	675	3,208	4,753	140	226	1,629	140	226	1,629	—	—	—	535	2,982	5,570
Utah	2,432	7,791	3,204	80	265	3,312	46	201	4,370	34	64	1,882	2,352	7,526	3,200
Wyoming	4,270	32,584	7,631	416	1,744	4,192	416	1,744	4,192	—	—	—	3,854	30,840	8,002
Total	22,341	125,556	5,539	2,778	9,516	3,435	2,744	9,452	3,447	34	64	1,882	19,963	116,440	5,833
Total All States	168,645	1,667,803	9,841	126,265	988,289	7,827	90,552	864,457	9,551	35,713	123,432	3,456	62,380	679,514	10,893

States	ALL CLASSES OF OWNERSHIP			TOTAL			INDUSTRIAL			FARM WOODLAND			PUBLIC OWNERSHIP		
	(M. Acres) Total Saw Timber Area	(M.M. feet B.M.) Total Saw Timber Stand	(Feet B.M.) Average Stand Per Acre	(M. Acres) Total Saw Timber Area	(M.M. feet B.M.) Total Saw Timber Stand	(Feet B.M.) Average Stand Per Acre	(M. Acres) Total Saw Timber Area	(M.M. feet B.M.) Total Saw Timber Stand	(Feet B.M.) Average Stand Per Acre	(M. Acres) Total Saw Timber Area	(M.M. feet B.M.) Total Saw Timber Stand	(Feet B.M.) Average Stand Per Acre	(M. Acres) Total Saw Timber Area	(M.M. feet B.M.) Total Saw Timber Stand	(Feet B.M.) Average Stand Per Acre

1/ Data in columns 1, 4, 7, 10, and 13 taken from Table 1 entitled "Commercial Forest Area of the U. S. by Regions, States, Classes of Ownership and Character of Growth."
Data in columns 2, 5, 8, 11, and 14 taken from Table 3 entitled "Stand of Saw Timber in the U. S. by Regions, States and Classes of Ownership."
2/ Less than 500 acres.
3/ Less than 500,000 feet B.M.

TABLE V PRODUCTION OF LUMBER IN THE UNITED STATES 1/

For 1925 - 1929 and a Five Year Average,
By States and Regions

(M. feet board measure)

State and Region	Softwood 1925	Softwood 1926	Softwood 1927	Softwood 1928	Softwood 1929	Softwood Five Year Average 2/	Hardwood 1925	Hardwood 1926	Hardwood 1927	Hardwood 1928	Hardwood 1929	Hardwood Five Year Average 2/	Total 1925	Total 1926	Total 1927	Total 1928	Total 1929	Total Five Year Average 2/
New England																		
Connecticut	10,407	11,896	19,170	9,878	9,918	12,254	31,243	35,471	36,779	25,478	20,239	29,842	41,650	47,367	55,949	35,356	30,157	42,096
Maine	301,832	307,819	231,223	240,569	233,297	262,948	28,271	33,074	32,595	25,954	24,613	28,901	330,103	340,893	263,818	266,523	257,910	291,849
Massachusetts	75,617	57,515	60,098	78,585	53,215	65,006	34,008	28,653	28,700	33,774	18,648	28,949	109,625	86,168	88,298	112,299	71,863	93,852
New Hampshire	215,370	210,025	130,670	211,190	165,066	198,464	45,310	32,982	25,242	28,071	26,637	31,648	260,680	243,007	215,912	239,261	191,703	230,113
Rhode Island	1,942	2,502	2,360	1,815	2,946	2,313	1,744	2,984	4,855	2,807	3,548	3,100	3,686	5,486	6,815	4,622	6,514	5,413
Vermont	62,071	59,290	48,504	53,527	60,098	56,698	64,362	52,348	42,376	53,831	59,524	54,488	126,433	111,638	90,880	107,358	119,622	111,185
Total	667,239	649,047	552,025	595,564	524,540	597,683	204,938	185,452	169,647	169,855	153,229	176,624	872,177	834,499	721,672	765,419	677,769	774,307
Middle Atlantic																		
Delaware	4,695	8,019	13,151	10,926	7,301	8,818	2,629	1,414	3,673	2,235	2,340	2,458	7,324	9,433	16,824	13,161	9,641	11,276
Maryland	37,227	29,346	31,585	29,533	31,524	31,843	51,736	39,098	35,956	30,196	23,346	36,066	88,963	68,444	67,541	59,729	54,870	67,909
New Jersey	4,242	2,310	258	102	687	1,520	5,574	4,643	4,786	3,118	14,889	6,602	9,816	6,953	5,044	3,220	15,576	8,122
New York	64,631	43,749	38,673	32,166	28,386	41,521	133,023	127,214	103,852	97,940	131,205	118,643	197,654	170,963	142,505	130,106	159,591	160,164
Pennsylvania	126,926	120,759	89,269	84,185	52,369	102,702	203,896	198,038	148,453	154,430	221,881	193,340	330,822	318,797	277,722	238,615	314,250	296,041
Total	237,721	204,183	172,936	156,912	160,267	186,404	396,558	370,407	336,700	287,919	393,661	357,109	634,579	574,590	509,636	444,731	553,928	543,512
Lake																		
Michigan	231,765	172,588	138,079	141,787	122,079	161,319	565,845	490,456	440,175	430,272	448,938	475,177	797,610	663,344	578,254	572,059	571,017	636,457
Minnesota	512,787	431,627	371,366	359,618	305,788	396,237	65,916	39,463	25,525	52,725	51,392	47,704	578,703	471,090	396,891	412,343	357,180	443,241
North Dakota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wisconsin	456,768	394,464	330,381	352,548	354,098	377,657	611,844	518,060	489,126	466,302	488,716	514,810	1,068,612	912,524	819,507	818,850	842,814	892,461
Total	1,201,320	998,979	839,826	853,953	781,965	935,208	1,243,605	1,047,979	954,826	949,299	989,046	1,036,952	2,444,925	2,046,958	1,794,652	1,803,252	1,771,011	1,972,159
Central																		
Illinois	1,475	2,487	800	484	619	1,163	28,051	35,870	27,883	29,139	37,062	31,593	29,456	38,357	28,663	29,623	37,681	32,757
Indiana	391	85	80	21	21	120	178,169	139,387	148,412	126,769	169,949	152,537	178,560	139,472	148,492	126,790	165,970	152,657
Iowa, Kansas, Nebraska	-	-	-	-	-	-	16,069	14,002	16,982	13,908	20,332	16,299	16,069	14,002	16,982	13,908	20,332	16,299
Kentucky	22,281	16,388	16,860	17,050	27,632	20,042	184,997	200,371	180,752	157,290	211,514	206,985	207,278	216,759	197,618	174,340	239,146	227,029
Missouri	72,772	68,520	45,940	35,272	37,383	51,977	114,017	110,048	143,196	106,718	190,695	132,935	186,789	178,568	189,136	141,990	228,078	184,913
Ohio	490	282	10	120	797	340	140,246	141,217	127,870	112,109	174,740	139,235	140,736	141,499	127,880	112,229	175,537	139,577
Tennessee	111,286	118,275	97,030	85,592	115,318	105,500	531,073	565,048	498,267	444,774	648,510	537,422	642,359	683,323	595,297	530,306	763,828	643,018
West Virginia	103,210	117,713	108,624	110,383	120,930	112,172	480,143	471,075	437,246	457,440	512,062	466,793	583,353	588,788	541,870	547,823	632,992	578,965
Total	311,855	323,750	269,344	248,922	302,700	291,314	1,672,745	1,677,018	1,57[illegible],594	1,428,087	2,064,864	1,683,860	1,984,[illegible]	2,000,768	1,845,978	1,677,009	2,367,564	1,975,178
South																		
Alabama	1,964,522	1,851,883	1,884,611	1,731,783	1,769,708	1,836,501	271,216	273,239	227,076	248,299	289,256	273,817	2,235,738	2,105,122	2,171,687	1,980,082	2,058,964	2,110,318
Arkansas	976,419	836,617	732,009	659,149	822,166	805,272	680,711	604,401	497,472	470,582	526,152	543,864	1,597,1[illegible]	1,441,018	1,229,481	1,129,731	1,348,318	1,349,136
Florida	1,050,924	904,755	882,588	933,514	1,028,422	960,041	12,952	15,830	24,540	61,558	108,475	44,671	1,063,57[illegible]	920,585	907,128	995,072	1,136,897	1,004,711
Georgia	1,238,181	1,025,329	1,034,435	888,437	1,189,839	1,075,244	126,993	120,160	166,573	151,038	196,411	152,235	1,365,174	1,145,489	1,201,008	1,039,475	1,380,250	1,227,479
Louisiana	2,564,272	2,100,028	1,664,987	1,550,414	1,418,036	1,859,547	728,839	789,502	720,777	728,008	814,724	756,278	3,293,091	2,889,530	2,385,724	2,278,422	2,232,760	2,615,825
Mississippi	2,597,365	2,3[illegible]2,634	2,09[illegible],547	2,035,097	2,174,193	2,262,567	530,313	532,360	463,065	439,222	495,[illegible]	402,06[illegible]	3,127,078	2,894,004	2,55[illegible],612	2,594,319	2,649,496	2,754,620
North Carolina	843,755	775,046	821,520	787,616	939,224	833,433	196,980	195,919	233,702	233,277	263,153	224,606	1,040,735	970,965	1,055,222	1,020,893	1,202,377	1,058,038
Oklahoma	152,120	134,331	154,497	174,957	175,199	158,221	5,460	15,598	15,446	18,836	24,545	15,977	157,580	149,929	169,943	193,795	199,744	174,198
South Carolina	856,880	776,615	639,654	660,025	877,821	762,199	125,409	144,210	177,362	161,875	190,166	159,404	980,289	920,825	817,016	821,900	1,067,587	921,603
Texas	1,366,332	1,242,205	1,219,489	1,217,361	1,188,208	1,246,699	211,676	213,916	226,971	229,325	263,532	229,054	1,578,008	1,456,121	1,446,460	1,446,686	1,451,640	1,475,783
Virginia	441,013	409,801	320,119	352,049	447,979	394,192	268,167	266,862	215,497	195,657	260,473	241,351	709,180	676,663	535,616	547,706	708,452	635,523
Total	14,051,783	12,399,244	11,447,456	11,040,402	12,030,695	12,193,916	3,096,696	3,171,997	3,028,441	2,937,677	3,432,790	3,173,320	17,148,479	15,571,241	14,478,897	13,978,079	15,462,485	15,327,236
Pacific Coast																		
California 3/	2,040,674	2,187,270	2,070,618	1,952,458	2,062,818	2,062,767	2,317	689	193	201	411	762	2,042,991	2,187,959	2,070,811	1,952,659	2,063,229	2,063,531
Oregon	4,209,596	4,447,673	3,985,052	4,361,904	4,772,194	4,355,280	6,787	7,062	7,620	10,020	11,815	8,701	4,216,383	4,454,735	3,992,852	4,371,924	4,784,005	4,363,981
Washington	7,024,145	7,541,229	7,311,008	7,291,924	7,274,707	7,288,603	3,180	5,010	14,854	13,353	27,356	12,750	7,027,325	7,546,239	7,325,862	7,305,277	7,302,063	7,301,351
Total	13,274,415	14,176,172	13,366,658	13,606,286	14,109,719	13,706,650	12,284	12,761	22,867	23,574	39,582	22,213	13,286,699	14,188,933	13,389,525	13,629,860	14,149,303	13,728,864
North Rocky Mountain																		
Idaho	1,140,110	947,269	923,491	977,253	1,028,734	1,003,371	465	202	495	215	57	287	1,140,575	947,471	923,986	977,468	1,028,791	1,003,658
Montana	388,844	378,493	396,207	387,802	388,666	388,002	10	205	60	77	45	78	388,854	378,698	396,267	387,879	388,711	388,082
Total	1,528,954	1,325,762	1,319,698	1,365,055	1,417,400	1,391,373	475	407	555	292	102	365	1,529,429	1,326,169	1,320,253	1,365,347	1,417,502	1,391,741
South Rocky Mountain																		
Arizona	145,609	115,230	169,085	158,047	174,594	152,512	-	2	-	-	-	-	145,609	115,232	169,085	158,047	174,594	152,513
Colorado	71,001	74,954	67,250	72,200	71,343	71,350	68	324	71	57	192	142	71,069	75,278	67,321	72,257	71,535	71,492
Nevada 3/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Mexico	152,325	127,110	172,517	162,030	148,287	152,453	5	-	-	-	-	1	152,330	127,110	172,517	162,030	148,287	152,454
South Dakota	46,719	49,273	46,909	53,967	61,125	51,599	60	8	-	-	1	14	46,779	49,281	46,909	53,967	61,126	51,613
Utah	5,432	6,248	5,955	7,361	5,082	6,016	429	231	197	262	219	267	5,861	6,479	6,152	7,623	5,301	6,284
Wyoming	16,105	19,392	12,863	24,396	25,628	19,677	-	-	-	6	1	1	16,105	19,392	12,863	24,402	25,629	19,678
Total	437,191	392,207	474,579	478,001	486,059	453,607	562	565	268	325	413	425	457,753	392,772	474,847	478,326	486,472	454,032
All Regions	31,710,478	30,469,344	28,442,522	28,345,095	29,813,345	29,756,155	6,628,163	6,466,586	6,069,898	5,797,028	7,072,687	6,410,872	38,338,641	36,935,930	34,532,420	34,142,123	36,886,032	36,167,027

1/ Source: Bureau of Census 1925, 1926, 1927, 1928 and 1929.
2/ Regional averages are calculated from the sum of regional totals.
3/ California and Nevada reported together to keep from disclosing production of a single mill.

TABLE V (a) SOFTWOOD AND HARDWOOD PRODUCTION BY STATES
FOR 1929 - 1934.

(Thousand feet board measure)

	Softwood								Hardwood							
	1929	1930	1931	1932	1933	1934	Total for 6 Years	Average Per Year	1929	1930	1931	1932	1933	1934	Total for 6 Years	Average Per Year
Alabama	1,769,708	1,153,186	621,602	463,947	639,202	544,583	5,192,228	865,372	289,256	188,438	110,418	60,061	117,449	114,569	900,191	150,032
Arizona	174,594	96,497	85,085	58,162	90,092	73,180	576,610	96,102								
Arkansas	822,166	569,684	348,190	205,563	335,764	418,858	2,700,225	450,037	526,152	299,695	159,525	71,023	178,614	208,789	1,443,798	240,633
California and Nevada	2,062,818	1,513,938	957,673	680,370	784,626	1,014,580	7,014,005	1,169,001	411	325	67	150	-	167	1,120	187
Colorado	71,343	54,564	48,345	39,085	33,698	49,370	296,405	49,401	192	124	68	78	61	94	617	103
Connecticut	9,916	7,238	7,110	2,442	3,623	5,796	36,127	6,021	20,239	13,287	5,781	3,049	3,279	5,616	51,251	8,542
Delaware	7,301	4,358	1,975	3,013	625	3,820	21,092	3,516	2,340	4,078	1,554	948	844	1,595	11,359	1,893
Florida	1,028,422	809,957	532,079	300,156	395,055	426,206	3,493,875	582,313	108,475	66,082	44,547	20,252	44,113	45,137	328,606	54,768
Georgia	1,189,839	632,564	400,363	242,573	420,450	417,610	3,303,399	550,566	196,411	120,920	59,254	21,083	52,796	58,611	509,075	84,846
Idaho	1,026,734	839,759	499,768	248,276	316,356	456,963	3,389,856	564,976	57	650	131	102	115	126	1,181	197
Illinois	619	538	7	100	158	20	1,672	279	37,062	24,674	18,439	8,032	7,933	14,678	110,818	18,470
Indiana	21	20	47	1	4	30	121	20	169,949	97,817	52,776	26,852	42,329	64,523	454,246	75,708
Iowa, Kansas and Nebraska		82	56			85	223	37	20,332	13,267	10,453	3,433	3,930	5,522	56,937	9,489
Kentucky	27,632	14,917	9,342	5,528	7,117	6,159	70,695	11,782	311,514	174,538	102,012	45,810	39,519	116,617	790,010	131,668
Louisiana	1,418,036	1,057,473	632,586	421,910	576,025	490,675	4,596,465	766,077	814,324	549,245	316,846	145,116	259,984	284,011	2,369,526	394,921
Maine	233,257	201,963	132,335	89,664	99,111	158,623	914,993	152,499	24,613	20,141	19,495	12,329	5,793	19,874	102,245	17,041
Maryland	31,524	23,311	14,236	9,688	7,220	9,436	95,415	15,902	23,346	24,355	14,852	6,844	5,048	14,659	90,504	15,084
Massachusetts	53,215	62,242	34,496	30,773	18,978	49,368	247,072	41,512	18,648	19,859	8,311	7,929	4,809	7,735	67,291	11,215
Michigan	122,079	107,712	67,420	30,254	42,763	58,116	428,544	71,424	448,938	369,119	189,243	60,836	116,851	177,244	1,372,231	228,705
Minnesota	305,788	153,079	63,520	41,083	37,888	67,908	669,266	111,544	51,392	69,310	31,448	16,999	10,767	27,652	207,368	34,561
Mississippi	2,174,193	1,127,173	674,008	423,081	615,803	664,692	5,678,950	946,492	495,303	357,905	189,213	108,116	176,228	210,514	1,536,779	256,130
Missouri	37,383	18,866	14,004	6,776	10,479	27,587	115,075	19,179	190,695	107,849	60,912	28,516	30,792	72,959	491,723	81,954
Montana	388,666	296,970	158,208	111,018	125,126	171,690	1,251,678	208,613	45	20	5	30		151	251	42
New Hampshire	165,066	156,283	74,221	48,051	89,946	135,464	669,031	111,505	26,637	25,419	20,234	12,633	11,465	19,182	115,570	19,262
New Jersey	687	114	100	230	1,040	2,281	4,352	725	14,889	12,199	7,241	4,466	5,097	6,380	50,272	8,379
New Mexico	148,287	142,885	58,787	71,714	89,498	101,409	612,580	102,097				1			1	
New York	26,386	22,289	15,011	9,409	8,263	18,848	102,206	17,034	131,205	87,328	59,041	29,438	27,451	39,826	374,291	62,382
North Carolina	939,224	656,820	412,728	314,738	433,561	438,158	3,195,229	532,538	263,153	158,015	88,074	68,114	79,638	133,294	790,288	131,715
Ohio	797	292	96	69	303	387	1,944	324	174,740	107,906	52,611	31,903	37,402	82,405	486,967	81,161
Oklahoma	175,199	146,362	69,232	62,572	98,712	95,512	649,589	108,265	24,545	15,115	7,746	2,044	5,924	15,474	70,848	11,808
Oregon	4,772,194	3,635,438	2,617,463	1,594,794	2,234,922	2,360,714	17,215,525	2,869,254	11,815	18,637	10,572	9,098	21,106	18,928	90,156	15,026
Pennsylvania	92,369	52,784	40,744	30,884	24,783	39,095	280,659	46,776	221,881	155,978	82,283	42,045	67,808	107,657	677,652	112,942
Rhode Island	2,946	3,616	1,510	1,703	2,163	3,333	15,271	2,545	3,568	3,403	1,440	1,189	776	982	11,358	1,893
South Carolina	877,821	526,744	310,394	254,606	289,373	261,173	2,520,111	420,018	190,166	160,671	139,973	99,307	132,367	79,888	822,372	137,062
South Dakota	61,125	59,464	26,840	17,370	29,895	33,466	228,160	38,027	1					1	2	
Tennessee	115,318	76,523	55,034	24,067	33,647	66,237	370,826	61,804	648,510	337,414	208,418	104,326	135,283	233,161	1,667,112	277,852
Texas	1,168,108	868,561	507,963	356,313	505,016	514,585	3,959,668	659,945	263,532	156,561	47,851	49,931	88,645	79,694	686,634	114,439
Utah	5,082	6,306	5,634	4,859	7,826	10,237	39,944	6,657	219	183	160	54	182	123	921	153
Vermont	60,098	47,116	27,877	22,676	16,689	26,367	200,823	33,470	59,524	47,101	32,732	17,151	13,403	23,646	193,757	32,293
Virginia	447,979	292,609	207,369	164,541	259,774	285,541	1,657,813	276,302	260,473	202,850	104,001	62,244	60,796	120,633	811,027	135,171
Washington	7,274,707	5,491,368	3,894,865	2254,706	3,091,161	3,045,929	25,052,776	4,175,463	27,356	10,741	13,132	5,963	14,914	18,341	90,467	15,078
West Virginia	120,930	86,202	47,754	23,461	38,247	37,835	354,429	59,071	512,062	319,881	199,237	111,822	146,366	186,086	1,475,454	245,909
Wisconsin	354,098	258,608	159,555	55,759	73,737	123,456	1,025,213	170,869	488,716	376,236	200,486	64,566	112,149	141,535	1,383,710	230,952
Wyoming	25,626	25,131	16,519	20,821	10,942	16,837	117,878	19,646	1	1	110	71	35		218	36
Total	29,613,345	21,322,786	13,951,951	8,745,636	11,698,873	12,735,356	98,367,949	16,394,655	7,072,687	4,726,687	2,670,692	1,405,596	2,062,261	2,758,261	20,696,204	3,449,702

SOURCE BUREAU OF THE CENSUS 1929, 1930, 1931, 1932, 1933 and 1934

TABLE V (b) - SOFTWOOD AND HARDWOOD AVERAGE PRODUCTION BY STATES FOR 1929 TO 1934

(M feet B. M.)

Region and State	Total	Softwoods	Hardwoods
New England			
Connecticut	14,563	6,021	8,542
Maine	169,580	152,499	17,041
Massachusetts	52,727	41,512	11,215
New Hampshire	130,767	111,505	19,262
Rhode Island	4,438	2,545	1,893
Vermont	65,763	33,470	32,293
Total	437,738	347,552	90,246
Middle Atlantic			
Delaware	5,409	3,516	1,893
Maryland	30,986	15,902	15,084
New Jersey	8,759	380	8,379
New York	79,416	17,034	62,382
Pennsylvania	159,718	46,776	112,942
Total	284,288	83,608	200,680
Lake			
Michigan	300,129	71,424	228,705
Minnesota	146,105	111,544	34,561
North Dakota	-	-	-
Wisconsin	401,821	170,869	230,952
Total	848,055	353,837	494,218
Central			
Illinois	18,749	279	18,470
Indiana	75,728	20	75,708
Iowa 1/	9,526	37	9,489
Kentucky	183,450	11,782	131,668
Missouri	101,133	19,179	81,954
Ohio	81,485	324	81,161
Tennessee	339,656	61,804	277,852
West Virginia	304,980	59,071	245,909
Total	1,074,707	152,496	922,211
South			
Alabama	1,015,404	865,372	150,032
Arkansas	690,670	450,037	240,633
Florida	637,081	582,313	54,768
Georgia	635,412	550,566	84,846
Louisiana	1,160,998	766,077	394,921
Mississippi	1,202,622	946,492	256,130
North Carolina	664,253	532,538	131,715
Oklahoma	120,073	108,265	11,808
South Carolina	557,080	420,018	137,062
Texas	774,384	659,945	114,439
Virginia	411,473	276,302	135,171
Total	7,869,450	6,157,925	1,711,525
Pacific Coast			
California 2/	1,169,188	1,169,001	187
Oregon	2,884,280	2,869,254	15,026
Washington	4,190,541	4,175,463	15,078
Total	8,244,009	8,213,718	30,291
North Rocky Mountain			
Idaho	565,173	564,976	197
Montana	208,655	208,613	42
Total	773,828	773,589	239
South Rocky Mountain			
Arizona	96,102	96,102	-
Colorado	49,504	49,401	103
New Mexico	102,097	102,097	-
South Dakota	18,027	18,027	-
Utah	6,810	6,657	153
Wyoming	19,682	19,646	36
Total	312,222	311,930	292
Grand Total	19,844,357	16,394,695	3,449,662
Region and State	Total	Softwoods	Hardwoods

1/ Includes Kansas and Nebraska
2/ Includes Nevada

Source: U. S. Bureau of Census.

TABLE VI ANNUAL DRAIN OF FOREST PRODUCTS (OTHER THAN LUMBER) AVERAGE 1925-1929

Region & State	Total	Softwoods	Hardwoods	Saw Timber Size Trees: Total		Softwoods		Hardwoods		Cordwood Size Trees: Total	Softwoods	Hardwoods
	M. Cu. Ft.	M. Cu. Ft.	M. Cu. Ft.	M. Cu. Ft.	M. Ft. B.M.	M. Cu. Ft.	M. Ft. B.M.	M. Cu. Ft.	M. Ft. B.M.	M. Cu. Ft.	M. Cu. Ft.	M. Cu. Ft.
New England	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Connecticut	26,478	3,533	22,945	10,543	48,824	3,159	14,772	7,384	34,052	15,935	374	15,561
Maine	176,361	72,650	103,711	72,760	339,617	64,412	301,021	8,368	38,596	103,581	8,238	95,343
Massachusetts	50,488	17,913	32,575	21,273	99,159	15,853	74,141	5,420	25,018	29,215	2,060	27,155
New Hampshire	131,609	54,459	77,150	54,587	254,756	48,280	225,666	6,307	29,090	77,022	6,179	70,843
Rhode Island	4,414	661	3,753	1,758	8,186	661	3,122	1,097	5,064	2,656	-	2,656
Vermont	63,649	16,432	47,217	26,466	122,978	14,560	68,062	11,906	54,916	37,183	1,872	35,311
Total	452,999	165,648	287,351	187,407	873,520	148,925	686,784	40,482	186,736	265,592	18,723	246,869
Middle Atlantic												
Delaware	11,220	4,126	7,094	3,218	14,941	1,074	5,042	2,144	9,899	8,002	3,052	4,950
Maryland	62,258	15,982	46,276	17,538	81,282	5,036	23,621	12,502	57,661	44,720	10,988	33,774
New Jersey	63,360	6,016	57,344	5,045	23,320	526	2,473	4,519	20,847	58,315	5,490	52,825
New York	281,551	39,814	241,737	40,144	186,761	21,526	100,922	18,618	85,839	241,407	18,288	223,119
Pennsylvania	233,465	25,925	207,540	45,814	211,743	6,474	30,336	39,340	181,407	187,651	19,451	168,200
Total	651,854	91,863	559,991	111,759	518,047	-	162,394	77,123	355,653	540,095	57,227	482,868
Lake												
Michigan	253,199	43,810	209,389	50,947	223,143	14,175	63,572	36,772	159,571	202,252	29,635	172,617
Minnesota	213,043	117,569	95,474	43,413	193,981	39,123	175,352	4,290	18,629	169,630	78,446	91,184
North Dakota	-	-	-	-	41	-	1	-	40	-	-	-
Wisconsin	353,082	99,064	254,018	72,540	319,483	32,820	147,100	39,720	172,383	280,542	66,244	214,298
Total	819,324	260,443	558,881	166,900	736,648	86,118	386,025	80,782	350,623	652,424	174,325	478,099
Central												
Illinois	79,763	177	79,586	37,428	163,316	177	865	37,251	162,451	42,335	-	42,335
Indiana	127,970	66	127,902	60,233	262,453	66	355	60,165	262,098	67,737	-	67,737
Iowa *	113,119	5,550	107,569	53,849	237,748	4,181	21,128	49,668	216,620	59,270	1,369	57,901
Kentucky	282,258	47,506	214,752	126,784	577,853	35,640	180,373	91,144	397,480	135,474	11,866	123,608
Missouri	226,237	9,187	219,050	109,698	482,647	6,905	34,952	102,793	447,695	116,539	2,282	116,257
Ohio	127,508	54	127,454	59,771	260,665	54	307	59,717	260,378	67,737	-	67,737
Tennessee	456,944	92,471	364,473	219,865	1,006,648	69,196	350,152	150,669	656,496	237,079	23,275	213,804
West Virginia	227,152	26,811	200,341	108,613	487,256	19,965	101,054	88,648	386,202	118,539	6,846	111,693
Total	1,622,951	181,824	1,441,127	776,241	3,478,616	136,186	689,186	640,055	2,789,430	846,710	45,638	801,072
South												
Alabama	328,426	183,690	144,736	209,737	984,582	106,386	550,306	103,351	434,276	118,689	77,304	41,385
Arkansas	393,177	191,615	201,562	250,750	1,164,367	114,311	593,332	136,439	573,035	142,427	77,304	65,123
Florida	121,626	106,848	14,778	74,151	370,291	60,466	312,933	13,685	57,358	47,475	46,382	1,093
Georgia	339,519	257,057	82,462	220,820	1,072,182	148,832	769,608	71,998	302,574	118,689	108,225	10,464
Louisiana	301,467	162,607	138,860	194,647	908,201	93,033	481,206	101,614	426,995	106,820	69,574	37,246
Mississippi	368,661	219,343	149,318	238,303	1,124,458	126,578	654,749	111,725	469,709	130,558	92,765	37,793
North Carolina	459,861	281,180	178,661	293,697	1,394,714	165,224	854,653	128,473	540,061	166,164	115,956	50,208
Oklahoma	96,548	19,345	77,203	60,941	267,204	11,615	59,966	49,326	207,238	35,607	7,730	27,877
South Carolina	227,109	164,686	62,223	144,027	697,448	95,313	492,742	48,714	204,706	83,082	69,573	13,509
Texas	354,665	117,812	236,853	224,107	1,010,408	71,430	369,310	152,677	641,098	130,558	46,382	84,176
Virginia	302,450	154,225	148,225	195,630	911,734	92,382	477,922	103,248	433,812	106,820	61,843	44,977
Total	3,293,709	1,858,608	1,435,101	2,106,820	9,905,587	1,085,570	5,614,727	1,021,250	4,290,860	1,186,889	773,038	413,851
Pacific Coast												
California **	62,205	56,198	6,007	48,951	280,078	48,951	280,078	-	-	13,254	7,247	6,007
Oregon	152,927	149,462	3,465	145,620	829,735	142,676	815,403	2,944	14,332	7,307	5,786	521
Washington	285,383	282,518	2,865	274,957	1,567,663	272,360	1,555,025	2,597	12,638	10,426	10,158	268
Total	500,515	488,178	12,337	469,528	2,677,476	463,987	2,650,506	5,541	26,970	30,987	24,191	6,796
Mo. Rocky Mt.												
Idaho	46,090	46,089	1	38,628	163,745	38,627	163,742	1	3	7,462	7,462	-
Montana	14,530	14,530	-	8,290	35,155	8,290	35,155	-	-	6,240	6,240	-
Total	60,620	60,619	1	46,918	198,900	46,917	198,897	1	3	13,702	13,702	-
So. Rocky Mt.												
Arizona	11,394	11,394	-	5,869	28,383	5,869	28,383	-	-	5,525	5,525	-
Colorado	5,207	5,087	120	2,696	13,011	2,576	12,459	120	552	2,511	2,511	-
Nevada **	-	-	-	-	-	-	-	-	-	-	-	-
New Mexico	11,373	11,373	-	5,848	28,277	5,848	28,277	-	-	5,525	5,525	-
South Dakota	3,732	3,719	13	1,691	9,134	1,678	9,076	13	58	1,841	1,841	-
Utah	778	422	356	443	2,091	220	1,068	223	1,023	335	202	133
Wyoming	1,982	1,982	-	978	4,730	978	4,730	-	-	1,004	1,004	-
Total	34,466	33,977	489	17,725	85,626	17,369	83,993	356	1,633	16,741	16,608	133
ALL REGIONS	7,436,438	3,141,160	4,295,278	3,683,298	18,474,420	2,017,708	10,472,512	1,865,590	8,001,908	3,553,140	1,123,452	2,429,688
Region & State	M. Cu. Ft. total	M. Cu. Ft. Softwoods	M. Cu. Ft. Hardwoods	M. Cu. Ft. Total	M. Ft. B.M.	M. Cu. Ft. Softwoods	M. Ft. B.M.	M. Cu. Ft. Hardwoods	M. Ft. B.M.	M. Cu. Ft. Total	M. Cu. Ft. Softwoods	M. Cu. Ft. Hardwoods
				Saw Timber Size Trees						Cordwood Size Trees		

* Includes Kansas and Nebraska.
** California and Nevada

1/ Columns 5, 7 and 9 were secured by subtracting the average lumber cut for the years 1925 to 1929 inclusive (U.S.Census), from the state and regional totals, softwood and hardwood saw timber drain on Table 5(c), entitled "Average Saw Timber Cut by States, 1925-1929." Regional totals for columns 11 and 12 taken from Table 24 in unpublished report of the Timber Conservation Board entitled, "The Forest Situation in the United States." Regional totals in column 10 are the sum of regional totals in columns 11 and 12.
A few state and regional totals in columns 10, 11 and 12, expressed in cords, were reduced to M cubic feet by applying the state cord percentages to the regional M cubic foot totals secured from Table 24, T.C.B. Such adjustments were made in all Middle Atlantic States, the Pacific Coast States and the North Rocky Mountain States.
Regional totals in columns 6 and 8 taken from Table 24, but reduced by the same percentage as the reduction made in arriving at the regional totals in columns 5 and 7. Column 4 is the sum of columns 6 and 8 secured by multiplying the regional totals by the same percentage as the state totals bear to the regional totals in columns 5 and 7.

Missing state totals in column 10 secured by multiplying the regional totals by the percentage that each state total is to the regional total in column 4. Missing state softwood totals in column 11 secured by multiplying the regional totals by the percentage that each state total is to the regional total in column 6. In the case of Arizona and New Mexico, this resulted in a figure slightly greater than the corresponding figures in column 10. In such cases, the figures in column 11 were reduced to the corresponding figures in column 10 and the amount of the reduction added to Colorado, South Dakota and Wyoming until they equalled column 10, the balance being added to Utah. This was done so as not to disturb the regional totals taken from Table 24. Column 12 is the difference between columns 10 and 11.
Columns 1, 2 and 3 secured by adding the appropriate columns 4, 6, 8, 10, 11 and 12.

TABLE VI (a)- TOTAL FOREST PRODUCTS DRAIN[1]

Item	Unit	Commodities Produced: Quantity[2] Total	Quantity[2] Softwood	Quantity[2] Hardwood	Timber Cut: All Timber[3] Total	All Timber[3] Softwood	All Timber[3] Hardwood	Saw Timber[4] Total	Saw Timber[4] Softwood	Saw Timber[4] Hardwood	Cordwood[5] Total	Cordwood[5] Softwood	Cordwood[5] Hardwood
		Thousands	Thousands	Thousands	Thousand cu. ft.	Thousand cu. ft.	Thousand cu. ft.	Thousand ft.b.m.	Thousand ft.b.m.	Thousand ft.b.m.	Cords	Cords	Cords
Lumber	Ft.b.m.[6]	38,000,000	30,957,920	7,042,080	7,371,372	5,668,700	1,702,672	38,000,000	30,957,920	7,042,080	-	-	-
Fuelwood	Cords	61,266	22,511	38,755	4,002,635	1,485,135	2,517,500	7,047,000	4,146,000	2,901,000	27,723,840	7,291,200	20,432,640
Hewed ties	Pieces	53,215	22,078	31,137	633,034	232,491	400,543	2,025,165	835,553	1,189,612	-	-	-
Fence posts	Pieces	395,946	138,503	257,443	628,836	278,438	350,398	1,299,459	654,438	645,021	3,641,342	1,615,345	2,025,997
Pulpwood	Cords	5,336	4,726	610	588,666	521,908	66,758	1,473,620	1,316,815	156,805	2,084,080	1,827,120	256,960
Mine timbers (round)	Cu. ft.	184,875	37,509	147,366	231,780	47,530	184,250	155,988	43,626	112,362	1,692,152	325,437	1,366,715
Veneer logs	Ft.b.m.[7]	920,034	293,882	626,152	230,607	59,601	171,006	1,033,708	332,691	701,017	-	-	-
Slack staves	Pieces	979,610	360,970	618,640	109,345	33,863	75,482	487,861	179,780	308,081	-	-	-
Slack heading	Sets	67,766	43,310	24,456	42,452	24,701	17,751	203,016	129,737	73,279	-	-	-
Slack hoops	Pieces	138,939	-	138,939	10,053	-	10,053	41,626	-	41,626	-	-	-
Logs & bolts in Manufacturee	Ft.b.m.[7]	593,328	92,393	500,935	156,575	20,790	135,785	677,960	109,443	568,517	-	-	-
Tight staves	Pieces	307,167	149,921	157,246	97,116	39,414	57,702	460,378	224,822	235,556	-	-	-
Tight heading	Sets	26,609	9,888	16,721	43,733	13,047	30,686	199,372	74,138	125,234	-	-	-
Shingles	Pieces	6,298,100	6,298,100	-	138,558	138,558	-	629,810	629,810	-	-	-	-
Export logs and hewn timbers	Ft.b.m.[7]	307,570	289,670	17,900	60,514	55,611	4,903	340,535	320,503	20,032	-	-	-
Poles	Pieces	3,443	2,790	653	37,571	31,894	5,677	149,374	131,859	17,515	43,679	31,955	11,724
Distillation wood	Cords	1,283	434	849	36,367	4,294	32,073	88,970	11,300	77,670	204,870	22,600	182,270
Piling	Pieces	1,363	912	451	28,978	21,125	7,853	141,527	108,497	33,030	13,866	13,205	661
Tanning extract wood	Cords	418	-	418	26,173	-	26,173	118,950	-	118,950	37,600	-	37,600
Excelsior wood	Cords	179	58	121	20,943	6,786	14,157	67,125	21,750	45,375	44,750	14,500	30,250
All items					14,495,308	8,683,886	5,811,422	54,641,444	40,228,682	14,412,762	35,486,179	11,141,362	24,344,817

1/ This table shows the annual commodity drain upon the commercial forests. It is based upon average commodity production in the years 1925 to 1929, inclusive; not only were more and better statistics available for this period than for any other recent one, but commodity statistics for 1930 had not been completed. The table obviously should not be construed as a measure of present production or a forecast of future wood requirements.

2/ The columns headed "Quantity" show the estimated number of units produced for each commodity listed, excluding production from sawmill waste and imported logs, but including that (the quantities were comparatively small) from non-commercial forests and so-called logging waste. Items in cords include the bark, wholly or in part.
In the succeeding divisions of the table the commodity production quantities are converted into terms of timber cut, suitable deductions being made for all production which is not properly chargeable as drain on commercial forests. Account is also taken of the fact that some items are produced wholly from saw timber, while others are partly from trees of less than saw timber size (see cordwood columns).

3/ Includes the computed total wood volume of both the saw timber and the cordwood trees cut from commercial forests. The volumes, necessarily shown in cubic feet, include the tops (cordwood size and larger) of the softwood saw timber trees, and the tops and limbs of the hardwood saw timber trees. Bark and the products of non-commercial forests are not included.

4/ Includes only trees of saw timber size. The volumes, in board feet, are equivalent to the lumber which could have been sawed from such trees.

5/ Includes only the merchantable volume, in cords, of trees below saw timber size. Products cut from tops and limbs of saw-timber-sized trees are not included.

6/ Lumber tally measure.

7/ Log scale measure.

Source: Based on a special report to the Timber Conservation Board from the United States Forest Service dated January 30, 1932.

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TABLE VII ANNUAL FOREST DRAIN - (OTHER THAN FOREST PRODUCTS)[1/]

FIRE

Region & State	Total M. Cu. Ft.	Fire Total M. Cu. Ft.	Fire Softwoods M. Cu. Ft.	Fire Hardwoods M. Cu. Ft.	Saw Timber Size Trees Total M. Cu. Ft.	Saw Timber Size Trees Total M. Ft. B.M.	Saw Timber Softwoods M. Cu. Ft.	Saw Timber Softwoods M. Ft. B.M.	Saw Timber Hardwoods M. Cu. Ft.	Saw Timber Hardwoods M. Ft. B.M.	Cordwood Size Trees Total M. Cu. Ft.	Cordwood Softwoods M. Cu. Ft.	Cordwood Hardwoods M. Cu. Ft.
New England													
Connecticut	1,042	174	48	126	12	28	5	10	7	18	182	44	118
Maine	59,676	9,972	2,776	7,196	700	1,628	265	573	435	1,055	9,273	2,512	6,761
Massachusetts	3,041	509	142	367	35	83	13	29	22	54	472	129	344
New Hampshire	10,510	1,756	488	1,257	124	237	47	101	77	186	1,633	442	1,191
Rhode Island	86	14	4	10	1	3	-	1	1	2	14	4	10
Vermont	12,508	2,090	582	1,508	146	341	55	120	91	221	1,643	526	1,417
Total	86,863	14,515	4,041	10,474	1,012	2,370	385	834	633	1,536	13,497	3,658	9,841
Middle Atlantic													
Delaware	255	209	54	155	7	28	2	7	5	21	202	52	150
Maryland	3,111	2,554	660	1,894	78	351	22	69	56	282	2,476	638	1,838
New Jersey	2,094	1,719	444	1,275	53	237	15	60	38	177	1,666	430	1,236
New York	43,678	35,853	9,263	26,590	1,095	4,934	307	1,254	788	3,680	34,757	8,955	25,802
Pennsylvania	14,347	11,776	3,042	8,734	352	1,621	101	412	258	1,209	11,416	2,941	8,475
Total	63,485	52,111	13,463	38,648	1,592	7,171	447	1,826	1,145	5,349	50,519	13,016	37,503
Lake													
Michigan	35,053	28,859	9,252	19,607	304	1,714	133	410	171	1,304	28,555	9,119	19,436
Minnesota	18,293	15,080	4,829	10,252	152	894	70	214	82	680	14,900	4,758	10,142
North Dakota	152	125	40	85	2	7	1	2	1	5	125	40	85
Wisconsin	23,037	18,967	6,081	12,886	200	1,125	67	289	113	836	18,766	5,993	12,773
Total	76,535	63,011	20,201	42,810	665	3,740	291	825	374	2,845	62,346	19,910	42,436
Central													
Illinois	17,461	7,844	721	7,123	248	1,085	25	89	223	996	7,596	696	6,900
Indiana	12,383	5,490	504	4,986	174	759	18	62	156	697	5,317	487	4,830
Iowa	6,240	2,789	256	2,533	88	386	9	32	79	354	2,201	247	2,454
Kentucky	31,594	14,031	1,289	12,742	443	1,940	45	158	398	1,762	13,588	1,244	12,344
Missouri	20,998	9,326	857	8,469	294	1,289	29	105	265	1,184	9,031	827	8,204
Ohio	23,744	10,546	969	9,577	334	1,458	34	119	300	1,339	10,212	935	9,277
Tennessee	54,948	24,403	2,242	22,161	771	3,374	78	276	693	3,098	23,632	2,164	21,468
West Virginia	28,651	12,724	1,169	11,555	401	1,759	40	144	361	1,615	12,323	1,129	11,194
Total	196,841	87,153	8,007	79,146	2,753	12,050	278	985	2,475	11,065	84,400	7,729	76,671
South													
Alabama	58,157	31,245	20,843	10,402	8,601	41,903	5,126	29,343	3,475	12,560	22,643	15,657	6,986
Arkansas	68,348	35,486	23,793	11,673	9,817	47,833	5,912	33,496	3,898	14,337	25,647	17,673	7,974
Florida	42,284	22,896	15,141	7,555	6,248	30,432	3,767	21,315	2,481	9,124	16,449	11,374	5,075
Georgia	57,610	30,950	20,647	10,303	8,520	41,507	5,137	29,066	3,383	12,441	22,430	15,510	6,920
Louisiana	78,449	42,150	28,118	14,031	11,603	56,530	6,996	39,586	4,607	16,944	30,547	21,123	9,424
Mississippi	56,511	30,360	20,253	10,107	8,358	40,717	5,039	28,513	3,319	12,204	22,002	15,214	6,788
North Carolina	53,219	29,591	19,073	9,518	7,870	38,346	4,745	26,852	3,125	11,494	20,721	14,328	6,393
Oklahoma	9,875	5,305	3,539	1,766	1,460	7,116	880	4,983	580	2,133	3,845	2,659	1,186
South Carolina	51,095	27,414	18,287	9,125	7,540	36,765	4,550	25,745	2,996	11,020	19,866	13,737	6,129
Texas	46,841	23,875	15,927	7,948	6,573	32,021	3,963	22,423	2,610	9,598	17,303	11,965	5,338
Virginia	30,785	16,507	12,012	5,495	4,549	21,137	2,740	15,502	1,804	6,635	11,963	8,272	3,691
Total	548,855	284,756	196,634	88,122	81,160	395,314	48,928	276,824	32,218	118,490	213,616	147,712	65,904
Pacific													
California	137,294	44,328	44,328	-	27,308	152,722	27,308	152,722	-	-	22,020	22,020	-
Oregon	212,731	76,449	76,449	-	42,323	236,690	42,323	236,690	-	-	34,127	34,127	-
Washington	156,546	56,245	56,245	-	31,137	174,137	31,137	174,137	-	-	25,107	25,107	-
Total	506,621	182,022	182,068	-	100,788	563,549	100,788	563,549	-	-	81,254	81,254	-
No. Rocky Mts.													
Idaho	184,851	114,067	114,067	-	44,139	259,343	44,139	259,343	-	-	69,928	69,928	-
Montana	94,907	58,788	58,788	-	22,738	133,601	22,738	133,601	-	-	36,024	36,024	-
Total	279,158	172,829	172,829	-	66,877	392,944	66,877	392,944	-	-	105,952	105,952	-
So. Rocky Mts.													
Arizona	8,378	674	674	-	415	2,056	415	2,056	-	-	259	259	-
Colorado	20,094	1,614	1,614	-	993	4,923	993	4,923	-	-	621	621	-
Nevada	320	26	26	-	16	79	16	79	-	-	10	10	-
New Mexico	6,083	489	489	-	301	1,493	301	1,493	-	-	188	188	-
South Dakota	1,388	112	112	-	69	340	69	340	-	-	43	43	-
Utah	3,308	266	266	-	164	812	164	812	-	-	102	102	-
Wyoming	13,820	1,112	1,112	-	684	3,392	684	3,392	-	-	428	428	-
Total	53,361	4,293	4,293	-	2,642	13,095	2,642	13,095	-	-	1,651	1,651	-
Grand Total	1,810,499	870,280	601,480	268,800	257,455	1,390,233	220,610	1,050,948	36,845	339,285	613,235	380,880	232,355

INSECTS, DISEASE, WINDTHROW, ETC.

Region & State	Total M. Cu. Ft.	Softwoods M. Cu. Ft.	Hardwoods M. Cu. Ft.	Saw Timber Size Trees Total M. Cu. Ft.	Saw Timber Size Trees Total M. Ft. B.M.	Saw Timber Softwoods M. Cu. Ft.	Saw Timber Softwoods M. Ft. B.M.	Saw Timber Hardwoods M. Cu. Ft.	Saw Timber Hardwoods M. Ft. B.M.	Cordwood Size Trees Total M. Cu. Ft.	Cordwood Softwoods M. Cu. Ft.	Cordwood Hardwoods M. Cu. Ft.
New England												
Connecticut	848	761	87	600	3,058	540	2,750	60	308	258	241	17
Maine	49,704	44,733	4,971	34,381	174,910	30,943	157,419	3,438	17,491	15,323	13,790	1,533
Massachusetts	2,532	2,279	253	1,751	8,212	1,576	8,020	175	891	781	703	78
New Hampshire	8,754	7,879	875	6,055	30,807	5,450	27,726	605	3,081	2,699	2,429	270
Rhode Island	72	65	7	50	254	45	229	5	25	22	20	2
Vermont	10,418	9,376	1,042	7,207	36,662	6,486	32,996	721	3,566	3,211	2,890	321
Total	72,348	65,113	7,235	50,044	254,200	45,040	229,140	5,004	25,460	22,304	20,073	2,231
Middle Atlantic												
Delaware	46	-	46	13	56	-	-	13	56	33	-	33
Maryland	557	-	557	155	694	-	-	155	694	402	-	402
New Jersey	375	-	375	104	467	-	-	104	467	271	-	271
New York	7,825	-	7,825	2,175	9,739	-	-	2,175	9,739	5,650	-	5,650
Pennsylvania	2,571	-	2,571	715	3,199	-	-	715	3,199	1,856	-	1,856
Total	11,374	-	11,374	3,162	14,155	-	-	3,162	14,155	8,212	-	8,212
Lake												
Michigan	6,194	1,617	4,577	3,942	16,151	1,105	3,157	2,837	13,014	2,252	512	1,740
Minnesota	3,233	844	2,389	2,058	8,428	577	1,637	1,481	6,791	1,175	267	908
North Dakota	27	7	20	17	71	5	14	12	57	10	2	8
Wisconsin	4,070	1,062	3,008	2,590	10,613	726	2,061	1,864	8,552	1,480	336	1,144
Total	13,524	3,530	9,994	8,607	35,263	2,413	6,869	6,194	28,414	4,917	1,117	3,800
Central												
Illinois	9,817	262	9,555	1,134	5,333	30	131	1,104	5,202	8,683	232	8,451
Indiana	6,873	184	6,689	793	3,732	21	91	772	3,641	6,079	163	5,916
Iowa	3,491	93	3,398	403	1,896	11	46	392	1,850	3,088	83	3,005
Kentucky	17,563	469	17,094	2,027	9,539	53	234	1,974	9,305	15,536	416	15,120
Missouri	11,672	312	11,360	1,348	6,339	36	155	1,312	6,184	10,325	276	10,049
Ohio	13,200	353	12,847	1,524	7,169	40	176	1,484	6,993	11,676	313	11,363
Tennessee	30,545	817	29,728	3,526	16,590	93	407	3,433	16,183	27,019	724	26,295
West Virginia	15,927	426	15,501	1,838	8,650	48	212	1,790	8,438	14,089	377	13,711
Total	109,088	2,916	106,172	12,593	59,288	332	1,452	12,261	57,796	96,495	2,584	93,911
South												
Alabama	26,913	10,661	16,252	6,796	43,580	3,393	22,268	5,403	21,312	18,117	7,268	10,849
Arkansas	30,722	12,170	18,552	10,041	49,746	3,873	25,419	6,168	24,327	20,681	8,296	12,385
Florida	19,550	7,744	11,806	6,390	31,657	2,465	16,176	3,925	15,481	13,161	5,280	7,881
Georgia	26,660	10,561	16,099	8,713	43,169	3,361	22,058	5,352	21,111	17,947	7,200	10,747
Louisiana	36,308	14,382	21,926	11,866	58,791	4,577	30,040	7,289	28,751	24,441	9,805	14,636
Mississippi	26,151	10,359	15,792	8,547	42,345	3,297	21,637	5,250	20,708	17,604	7,062	10,542
North Carolina	24,828	9,756	14,872	8,049	39,879	3,105	20,377	4,944	19,502	16,579	6,651	9,928
Oklahoma	4,570	1,810	2,760	1,494	7,400	576	3,781	918	3,619	3,076	1,234	1,842
South Carolina	23,613	9,354	14,259	7,717	38,235	2,977	19,537	4,740	18,698	15,896	6,377	9,519
Texas	20,566	8,147	12,419	6,722	33,301	2,593	17,016	4,129	16,285	13,844	5,554	8,290
Virginia	14,218	5,632	8,586	4,646	23,023	1,792	11,764	2,854	11,259	9,572	3,840	5,732
Total	253,899	100,576	153,323	82,981	412,126	32,009	210,073	50,972	201,053	170,918	68,567	102,351
Pacific												
California	87,966	87,966	-	78,900	473,868	78,900	473,868	-	-	9,066	9,066	-
Oregon	136,332	136,332	-	122,281	734,439	122,281	734,439	-	-	14,051	14,051	-
Washington	100,301	100,301	-	89,964	540,357	89,964	540,357	-	-	10,337	10,337	-
Total	324,599	324,599	-	291,145	1,748,664	291,145	1,748,664	-	-	33,454	33,454	-
No. Rocky Mts.												
Idaho	70,164	70,164	-	64,526	313,203	64,526	313,203	-	-	5,638	5,638	-
Montana	36,145	36,145	-	33,241	161,347	33,241	161,347	-	-	2,904	2,904	-
Total	106,309	106,309	-	97,767	474,550	97,767	474,550	-	-	8,542	8,542	-
So. Rocky Mts.												
Arizona	7,704	7,704	-	4,174	16,415	4,174	16,415	-	-	3,530	3,530	-
Colorado	18,450	18,450	-	9,996	39,313	9,996	39,313	-	-	8,453	8,453	-
Nevada	294	294	-	160	627	160	627	-	-	135	135	-
New Mexico	5,594	5,594	-	3,031	11,919	3,031	11,919	-	-	2,563	2,563	-
South Dakota	1,276	1,276	-	691	2,719	691	2,719	-	-	585	585	-
Utah	3,042	3,042	-	1,648	6,483	1,648	6,483	-	-	1,394	1,394	-
Wyoming	12,708	12,708	-	6,886	27,080	6,886	27,080	-	-	5,822	5,822	-
Total	49,068	49,068	-	26,546	104,556	26,546	104,556	-	-	22,522	22,522	-
Grand Total	940,209	652,111	288,098	572,885	3,102,168	495,292	2,775,284	77,593	326,878	367,324	156,819	210,505

1/ Prepared by the U. S. Forest Service for the Timber Conservation Board, except for the breakdown by states. The state figures were computed by figuring the percentage of state stand to regional stand of saw timber and applying those percentages throughout in the regional figures of the Forest Service. The stand figures used were taken from Table 3 entitled "Stand of Saw Timber in the United States by Regions, States, and Classes of Ownership."

TABLE VIII TOTAL ANNUAL FOREST DRAIN, BASED ON 1925 - 1929 AVERAGE (M. CUBIC FEET)

LUMBER DRAIN, 1934 (M Cubic feet)

State and Region	Total 1/	Softwoods 1/	Hardwoods 1/	Forest Products: Total 2/	Forest Products: Lumber: Total 3/	Forest Products: Lumber: Softwoods 4/	Forest Products: Lumber: Hardwoods 4/	Forest Products: Other: Total 5/	Forest Products: Other: Softwoods 5/	Forest Products: Other: Hardwoods 5/	Fire, Insects, Disease, etc.: Total 6/	Fire, Insects, Disease, etc.: Softwoods 6/	Fire, Insects, Disease, etc.: Hardwoods 6/	Lumber Drain 1934: Total 7/	Lumber Drain 1934: Softwoods 7/	Lumber Drain 1934: Hardwoods 7/
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
New England																
Connecticut	36,611	6,983	29,628	35,569	9,091	2,621	6,470	26,478	3,533	22,945	1,042	829	213	2,465	1,240	1,225
Maine	298,552	176,408	122,144	238,876	62,515	56,249	6,266	176,361	72,650	103,711	59,676	47,509	12,167	38,235	33,932	4,303
Massachusetts	73,645	34,240	39,405	70,604	20,116	13,906	6,210	50,488	17,913	32,575	3,041	2,421	620	12,266	10,561	1,705
New Hampshire	191,436	105,282	86,154	180,926	49,317	42,455	6,862	131,609	54,459	77,150	10,510	8,368	2,142	33,143	28,978	4,165
Rhode Island	5,667	1,225	4,442	5,581	1,167	455	672	4,414	661	3,753	86	69	17	930	713	217
Vermont	200,099	38,519	61,580	87,591	23,942	12,129	11,813	63,649	16,432	47,217	12,508	9,958	2,550	10,813	5,641	5,172
Total	706,010	362,657	343,353	619,147	166,148	127,855	38,293	452,999	165,648	287,351	86,863	69,154	17,709	97,852	81,065	16,787
Middle Atlantic																
Delaware	13,906	6,061	7,845	13,651	2,431	1,881	550	11,220	4,126	7,094	255	54	201	1,167	815	352
Maryland	80,238	23,433	56,805	77,127	14,869	6,791	8,078	62,258	15,982	46,276	3,111	660	2,451	5,276	2,012	3,264
New Jersey	67,257	6,784	60,473	65,163	1,803	324	1,479	63,360	6,016	57,344	2,094	444	1,650	1,645	220	1,425
New York	360,657	57,932	302,725	316,979	35,428	8,855	26,573	281,551	39,814	241,737	43,678	9,263	34,415	12,979	4,020	8,959
Pennsylvania	313,019	50,871	262,148	298,672	65,207	21,904	43,303	233,465	25,925	207,540	14,347	3,042	11,305	32,324	8,338	23,986
Total	835,077	145,081	689,996	771,992	119,738	39,755	79,983	651,854	91,863	559,991	63,485	13,463	50,022	53,391	15,405	37,986
Lake																
Michigan	433,698	90,662	343,036	398,645	145,446	35,983	109,463	253,199	43,810	209,389	35,053	10,849	24,184	53,831	13,007	40,824
Minnesota	330,549	211,625	118,924	312,256	99,213	88,384	10,829	213,043	117,569	95,474	18,293	5,672	12,621	21,445	15,247	6,198
North Dakota	152	47	105	-	-	-	-	-	-	-	152	47	105	-	-	-
Wisconsin	578,961	190,446	388,515	555,924	202,842	84,239	118,603	353,082	99,064	254,018	23,037	7,143	15,894	60,228	27,538	32,690
Total	1,343,360	492,780	850,580	1,266,825	447,501	208,606	238,895	819,324	260,443	558,881	76,535	23,731	52,804	135,404	55,692	79,712
Central																
Illinois	104,902	1,390	103,512	87,241	7,478	230	7,248	79,763	177	79,586	17,661	983	16,678	3,408	49	3,359
Indiana	175,354	780	174,574	162,991	35,021	24	34,997	127,970	68	127,902	12,363	688	11,675	14,809	6	14,803
Iowa, Kansas, Nebraska	123,129	5,899	117,230	116,849	3,730	-	3,730	113,119	5,550	107,569	6,280	349	5,931	1,286	-	1,286
Kentucky	345,301	53,224	292,077	313,707	51,449	3,960	47,489	262,258	47,506	214,752	31,594	1,758	29,836	27,819	1,217	26,602
Missouri	290,004	20,626	269,378	269,006	40,769	10,270	30,499	228,237	9,187	219,050	20,998	1,169	19,829	22,168	5,451	16,717
Ohio	183,267	1,443	181,824	159,521	32,013	67	31,946	127,508	54	127,454	23,746	1,322	22,424	18,989	76	18,913
Tennessee	656,064	116,377	539,687	601,116	144,172	20,847	123,325	456,944	92,471	364,473	54,948	3,059	51,889	67,129	13,089	54,040
West Virginia	385,066	50,571	334,495	356,415	129,263	22,165	107,098	227,152	26,811	200,341	28,651	1,595	27,056	49,994	7,476	42,518
Total	2,263,087	250,310	2,012,777	2,066,846	443,895	57,563	386,332	1,622,951	181,824	1,441,127	196,241	10,923	185,318	205,602	27,364	178,238
South																
Alabama	815,348	576,852	238,496	757,191	428,765	361,658	67,107	328,426	183,690	144,736	58,157	31,504	26,653	133,923	107,244	26,679
Arkansas	751,435	386,159	365,276	685,047	291,870	158,581	133,289	393,177	191,515	201,562	66,388	35,963	30,425	135,784	82,485	53,299
Florida	363,878	318,791	45,087	321,632	200,006	189,058	10,948	121,626	106,848	14,778	42,246	22,885	19,361	94,228	84,329	9,903
Georgia	646,184	500,011	146,173	588,574	249,055	211,746	37,309	339,519	257,057	82,462	57,610	31,208	26,402	96,625	82,239*	14,386
Louisiana	931,468	571,304	360,164	853,010	551,543	366,196	185,347	301,467	162,607	138,860	78,458	42,501	35,957	163,333	96,620	66,713
Mississippi	991,526	695,518	296,008	935,015	566,254	445,563	120,591	368,861	219,343	149,518	56,511	30,612	25,899	179,580	130,897	48,983
North Carolina	732,251	474,134	258,117	679,032	219,171	164,125	55,046	459,861	281,180	178,681	53,219	28,829	24,390	118,375	86,285	32,090
Oklahoma	141,495	55,851	[illegible]	[illegible]	[illegible]	31,157	3,915	96,548	19,344	77,303	9,875	5,349	4,526	22,445	16,[illegible]	[illegible]
South Carolina	467,300	342,626	124,674	416,275	189,166	150,099	39,067	227,109	164,886	62,223	51,025	27,641	23,384	70,005	51,432	18,573
Texas	700,757	387,394	313,363	656,316	301,651	245,508	56,143	354,665	117,812	236,853	44,441	24,074	20,367	121,512	101,335	20,177
Virginia	469,947	248,496	221,451	439,222	136,772	77,627	59,145	302,450	154,225	148,225	30,725	16,644	14,081	87,413	56,230	31,183
Total	7,011,589	4,557,136	2,454,453	6,462,934	3,169,225	2,401,318	767,907	3,293,709	1,858,608	1,435,101	548,655	297,210	251,445	1,223,423	897,900	325,523
Pacific Coast																
California & Nevada	566,024 8/	559,861 8/	6,163	428,410	366,205	366,049	156	62,205	56,198	6,007	137,614 8/	137,614 8/	-	180,082	180,043	39
Oregon	1,140,360	1,135,108	5,252	927,579	774,652	772,865	1,787	152,927	149,462	3,465	212,781	212,781	-	422,412	418,920	3,492
Washington	1,737,947	1,732,464	5,483	1,581,401	1,296,018	1,293,400	2,618	285,383	282,518	2,865	156,546	156,546	-	543,919	540,516	3,403
Total	3,444,331 8/	3,427,433 8/	16,898	2,937,390	2,436,875	2,432,314	4,561	500,515	488,178	12,357	506,941 8/	506,941 8/	-	1,146,413	1,139,479	6,934
North Rocky Mountain																
Idaho	393,714	393,650	64	209,483	163,393	163,330	63	46,090	46,089	1	184,231	184,231	-	74,413	74,385	28
Montana	172,614	172,597	17	77,707	63,177	63,160	17	14,530	14,530	-	94,907	94,907	-	27,975	27,948	27
Total	566,328	566,247	81	287,190	226,570	226,490	80	60,620	60,619	1	279,138	279,138	-	102,388	102,333	55
South Rocky Mountain																
Arizona	51,318	51,318	-	42,940	31,546	31,546	-	11,394	11,394	-	8,378	8,378	-	15,157	15,157	-
Colorado	40,060	39,909	151	19,996	14,789	14,758	31	5,207	5,087	120	20,064	20,064	-	10,232	10,212	20
New Mexico	48,990	48,990	-	42,907	31,534	31,534	9/	11,373	11,373	-	6,083	6,083	-	20,976	20,975	-
South Dakota	15,796	15,780	16	14,408	10,676	10,673	3	3,732	3,719	13	1,388	1,388	-	6,923	6,922	1
Utah	5,388	4,974	414	2,080	1,302	1,244	58	778	422	356	3,308	3,308	-	2,147	2,117	30
Wyoming	19,872	19,872	-	6,052	4,070	4,070	9/	1,982	1,982	-	13,820	13,820	-	3,896	3,896	-
Total	181,425 8/ 9/	180,843 8/	582 9/	128,384 8/	93,918	93,825	93	34,466	33,977	489	53,041 8/	53,041 8/	-	59,311	59,260	51
TOTAL ALL STATES	16,352,207	9,982,487	6,368,720	14,540,308	7,103,870	5,587,726	1,516,144	7,436,438	3,141,260	4,295,278	1,810,899	1,253,601	557,298	3,023,784	2,375,498	648,286
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
State and Region	Total 1/	Softwoods 1/	Hardwoods 1/	Forest Products: Total 2/	Lumber: Total 3/	Lumber: Softwoods 4/	Lumber: Hardwoods 4/	Other: Total 5/	Other: Softwoods 5/	Other: Hardwoods 5/	Fire, Insects, Disease, etc.: Total 6/	Softwoods 6/	Hardwoods 6/	Total 7/	Softwoods 7/	Hardwoods 7/

1/ Regional totals in columns 1, 2 and 3 are taken from Table 11, page 208 in "A National Plan for American Forestry." State totals in column 1 equal the sum of respective state totals in columns 4 and 11. State totals in column 2 equal the sum of respective state totals in columns 6, 9 and 12; state totals in column 3 equal the sum of respective state totals in columns 7, 10 and 13.
2/ The sum of columns 5 and 8.
3/ Regional totals are obtained by subtracting the sum of respective regional totals in columns 8 and 11 from corresponding regional totals in column 1. State totals are the sum of respective state totals in columns 6 and 7.
4/ Regional totals are obtained by subtracting the sum of applicable regional totals in columns 9, 10, 12, 13, 15 and 16 from corresponding totals in column 1. State totals are obtained by multiplying the regional totals by the percentage of state to regional totals based upon reports of the Bureau of Census for the period 1925 - 1929.
5/ Columns 8, 9, and 10 are taken from columns 1, 2 and 3 of Table 6, entitled "Annual Drain of Forest Products(Other than Lumber)."
6/ Columns 11, 12, and 13 are taken from columns 1, 3, 4, 19, and 16 of Table 7, entitled "Annual Forest Drain(Other than forest products)."
7/ Columns 14, 15, and 16 are obtained by multiplying applicable columns 5, 6, and 7 by the percentage that the lumber production (U.S. Census) in 1934 was of the average lumber production in 1925 - 1929. The lumber drain based upon 1925 - 1929 experience is obviously high for the immediate future and the 1934 drain may be more in line with future lumber consumption. No statistics are available upon which to estimate the 1934 drain of other forest products.
8/ 320,000 cubic feet of softwood drain in Nevada from fire, insects, disease, etc. has been subtracted from the figures for the South Rocky Mountain Region and included with the figures for California and Nevada in the Pacific Coast Region.
9/ 1,000 cubic feet of hardwood lumber drain is divided between New Mexico and Wyoming and cannot therefore be distributed by states. This amount is, however, included in the regional totals.

TABLE VIII (a) TIMBER CUT ON NATIONAL AND INDIAN FORESTS COMPARED TO TOTAL CUT (Excluding Alaska)

(M. feet, B.M.)

ENTIRE UNITED STATES

YEAR	National and Indian Forest Cut: Total	National Forest	Indian 2/	Total Cut	Percentage National and Indian Forest Cut to Total Cut
1925	1,593,870	1,125,642	468,228	38,338,641	4.157
1926	1,701,999	1,119,572	582,427	36,935,930	4.608
1927	1,665,586	1,036,328	629,258	34,532,420	4.823
1928	1,976,749	1,336,618	640,131	34,142,123	5.790
1929	2,082,445	1,422,188	660,257	36,886,057	5.645
1930	1,795,977	1,254,963	541,014	26,051,473	6.894
1931	1,109,182	793,816	315,366	16,522,643	6.713
1932	505,730	383,721	122,009	10,151,232	4.977
1933	468,545	369,498 2/	99,047	13,961,134	3.499
1934	766,749	598,757 2/	167,992	15,493,639	4.949
Total	13,685,322	9,560,033	4,225,289	263,015,267	5.203

PACIFIC COAST REGION 1/

YEAR	National and Indian Forest Cut: Total	National Forest	Indian 2/	Total Cut	Percentage National and Indian Forest Cut to Total Cut
1925	918,357	624,981	293,376	13,285,699	6.912
1926	1,157,519	739,983	417,536	14,152,933	8.180
1927	1,060,166	645,831	414,335	13,389,525	7.918
1928	1,286,165	825,509	460,656	13,629,940	9.436
1929	1,290,913	816,118	474,795	14,149,303	9.124
1930	1,106,141	731,611	374,530	10,670,477	10.366
1931	685,409	430,709	254,700	7,493,772	9.146
1932	251,165	162,428	88,737	4,545,101	5.526
1933	253,463	171,566 2/	81,897	6,146,749	4.124
1934	427,943	327,499 2/	100,444	6,458,459	6.626
Total	8,437,541	5,476,235	2,961,306	103,959,076	8.116

NORTH ROCKY MOUNTAIN REGION

YEAR	National and Indian Forest Cut: Total	National Forest	Indian 2/	Total Cut	Percentage National and Indian Forest Cut to Total Cut
1925	283,210	200,837	82,373	1,529,479	18.517
1926	259,648	165,886	93,762	1,326,169	19.579
1927	216,276	148,584	67,692	1,320,253	16.381
1928	247,127	184,727	62,400	1,365,347	18.100
1929	256,310	161,086	95,224	1,417,502	18.082
1930	213,745	146,174	67,571	1,157,999	18.529
1931	110,013	92,957	17,056	658,112	16.716
1932	52,105	45,950	6,155	351,426	14.897
1933	39,303	34,163 2/	5,140	441,997	8.890
1934	66,413	57,887 2/	8,526	626,930	10.560
Total	1,741,150	1,235,251	505,899	10,184,164	17.097

SOUTH ROCKY MOUNTAIN REGION

YEAR	National and Indian Forest Cut: Total	National Forest	Indian 2/	Total Cut	Percentage National and Indian Forest Cut to Total Cut
1925	323,139	247,262	75,877	437,753	73.818
1926	204,718	155,172	49,546	392,772	52.121
1927	260,646	179,334	81,312	474,847	54.891
1928	313,330	224,378	88,952	478,326	65.507
1929	384,872	304,392	80,480	486,472	75.004
1930	293,254	234,562	58,692	384,031	76.362
1931	200,982	191,825	9,157	241,548	83.206
1932	118,680	114,053	4,627	212,215	55.924
1933	139,315	131,345 2/	7,970	262,229	53.127
1934	177,830	137,953 2/	39,877	286,717	62.023
Total	2,396,966	1,920,426	476,540	3,656,910	65.546

TOTAL WEST

YEAR	National and Indian Forest Cut: Total	National Forest	Indian 2/	Total Cut	Percentage National and Indian Forest Cut to Total Cut
1925	1,524,706	1,073,080	451,626	15,253,883	9.996
1926	1,622,185	1,060,991	561,194	15,907,874	10.197
1927	1,537,088	973,749	563,339	15,184,625	10.123
1928	1,846,622	1,234,416	612,206	15,473,533	11.933
1929	1,932,095	1,281,596	650,499	16,053,275	11.911
1930	1,610,140	1,109,347	500,793	12,192,907	13.207
1931	996,404	715,491	280,913	8,993,432	11.079
1932	421,950	322,431	99,519	5,116,742	8.246
1933	432,081	337,074 2/	95,007	6,850,975	6.307
1934	672,186	523,339 2/	148,847	7,370,106	9.115
Total	12,575,657	8,631,912	3,943,745	117,800,190	10.675

1/ Includes Nevada.
2/ Fiscal year.
Source: National Forest cut data taken from respective annual reports of the Forester, U. S. Forest Service, except for 1932 and 1933. These were secured direct from the Forest Service.
Indian Forest cut data furnished by the Office of Indian Affairs, Department of the Interior.

TABLE IX - PRESENT CURRENT ANNUAL GROWTH OF USABLE MATERIAL ON COMMERCIAL FOREST AREAS OF THE U. S. 1/

(Exclusive of Alaska)

State and Region	COMBINED SAW TIMBER AND CORDWOOD GROWTH			SAW TIMBER GROWTH						Saw Timber and Cordwood Areas (M. acres)
	Total M.M. cubic feet	Softwood M.M. cubic feet	Hardwood M.M. cubic feet	Total M.M. cubic feet	Softwood M.M. cubic feet	Hardwood M.M. cubic feet	Total M.M. feet B.M.	Softwood M.M. feet B.M.	Hardwood M.M. feet B.M.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
New England										
Connecticut	25	10	15	9	5	4	45	24	21	1,098
Maine	261	99	162	100	54	46	482	251	231	13,466
Massachusetts	35	13	22	13	7	6	63	34	29	1,534
New Hampshire	39	15	24	15	8	7	69	37	32	1,693
Rhode Island	2	-	2	1	-	1	3	2	1	84
Vermont	65	25	40	25	13	12	116	62	54	2,839
Total	427	162	265	163	87	76	784	410	374	18,704
Middle Atlantic										
Delaware	11	2	9	2	1	1	10	3	7	299
Maryland	68	12	56	13	4	9	61	18	43	1,895
New Jersey	32	6	26	6	1	5	29	9	20	905
New York	265	48	217	52	15	37	241	72	169	7,453
Pennsylvania	252	46	212	51	15	36	234	70	164	7,260
Total	634	114	520	124	36	88	575	172	403	17,812
Lake										
Michigan	198	51	147	81	8	73	36	4	32	4,300
Minnesota	199	52	147	81	8	73	36	4	32	4,320
North Dakota	6	1	5	2	-	2	1	-	1	119
Wisconsin	241	63	178	98	10	88	43	4	39	5,235
Total	644	167	477	262	26	236	116	12	104	13,974
Central										
Illinois	73	5	68	11	5	6	47	3	44	3,084
Indiana	70	5	65	10	5	5	45	2	43	2,907
Iowa	56	4	52	8	4	4	36	2	34	2,336
Kentucky	174	13	161	25	13	12	112	6	106	7,210
Missouri	239	18	221	34	17	17	154	9	145	9,902
Ohio	102	7	95	15	7	8	66	4	62	4,256
Tennessee	295	22	273	42	21	21	190	11	179	12,738
West Virginia	119	9	110	17	9	8	77	4	73	4,953
Total	1,128	83	1,045	162	81	81	727	41	686	46,826
South										
Alabama	515	322	193	156	103	53	732	532	200	11,812
Arkansas	640	400	240	193	128	65	910	661	249	14,703
Florida	564	353	211	170	113	57	801	583	218	12,954
Georgia	629	394	235	190	126	64	894	651	243	14,461
Louisiana	428	268	160	130	86	44	609	442	166	9,842
Mississippi	327	204	123	99	65	34	464	338	126	7,521
North Carolina	526	329	197	159	105	54	747	544	203	12,085
Oklahoma	112	70	42	34	22	12	160	116	44	2,586
South Carolina	335	210	125	101	67	34	476	346	130	7,693
Texas	341	214	127	103	68	35	485	353	132	7,852
Virginia	367	230	137	111	73	38	521	379	142	8,457
Total	4,784	2,994	1,790	1,446	956	490	6,799	4,946	1,853	109,959
Pacific Coast										
California	173	171	2	79	78	1	453	448	5	12,894
Oregon	314	312	2	145	143	2	825	816	9	23,490
Washington	193	192	1	89	87	2	507	501	6	14,419
Total	680	675	5	313	308	4	1,785	1,765	20	50,823
North Rocky Mountain										
Idaho	218	218	-	71	71	-	301	301	-	11,929
Montana	198	198	-	64	64	-	275	275	-	10,801
Total	416	416	-	135	135	-	576	576	-	22,730
South Rocky Mountain										
Arizona	25	25	-	10	10	-	89	89	-	3,613
Colorado	80	80	-	32	32	-	157	157	-	11,489
Nevada	2	2	-	1	-	-	4	4	-	296
New Mexico	26	26	-	10	10	-	50	50	-	3,711
South Dakota	9	9	-	4	4	-	17	17	-	1,250
Utah	19	19	-	8	8	-	38	38	-	2,410
Wyoming	38	38	-	15	15	-	74	74	-	5,519
Total	199	199	-	80	79	-	389	389	-	28,698
TOTAL ALL STATES	8,912	4,810	4,102	2,685	1,709	976	11,731	8,511	3,220	309,526
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
State and Region	M.M. cubic feet Total	M.M. cubic feet Softwood	M.M. cubic feet Hardwood	M.M. cubic feet Total	M.M. cubic feet Softwood	M.M. cubic feet Hardwood	M.M. feet B.M. Total	M.M. feet B.M. Softwood	M.M. feet B.M. Hardwood	(M. acres) Saw Timber and Cordwood Areas
	COMBINED SAW TIMBER AND CORDWOOD GROWTH			SAW TIMBER GROWTH						

1/ Regional totals in columns 1, 2, 3, 7, 8 and 9 taken from Table 17, page 223, in "A National Plan for American Forestry." Column 10 equals the sum of columns 2 and 3 on Table 1 entitled, "Commercial Forest Area of the United States." State totals in columns 1, 2, 3, 7, 8 and 9 secured by multiplying the regional totals by the percentage that the states bear to the regional totals in column 10. Regional totals in column 4 secured by multiplying the regional totals in column 7 by the percentage that the regional totals in column 4 are to the regional totals in column 5 of Table 6 entitled, "Annual Drain of Forest products (Other than lumber)." Likewise the regional totals in column 5 were secured from the regional totals in columns 6 and 7 of the same table. Column 6 is the difference between columns 4 and 5. State totals in columns 4 and 5 secured by multiplying the regional totals by the percentage that state are to regional totals in columns 7 and 8 respectively.

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TABLE IX (a)

COMPARISON OF FOREST PRODUCTS DRAIN AND FOREST GROWTH

On Entire Commercial Forest Area — Gross Drain (Average 1925-1929)

Region	Area (M Acres)1/	Stand (M Cu Feet)2/	Total (M Cu Feet)	Lumber (M Cu Feet)3/	Other Forest Products (M Cu Feet)3/	Fire, etc (M Cu Feet)3/	Current Annual Growth (M Cu Feet)4/	Net Drain (M Cu Feet)	Number of Year's Supply at 1925-1929 Ave Drain5/	Possible Annual Growth (M Cu Feet)6/	Prospective Net Drain (M Cu Feet)	Number of Year's Supply at 1925-1929 Ave Drain7/
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
New England	27,273	26,730,000	706,010	146,146	452,999	46,463	427,000	279,010	90	800,000	Surplus	Perpetual
Middle Atlantic	27,136	22,649,000	635,077	119,736	461,464	63,465	434,000	201,077	113	1,040,000	"	"
Lake	55,695	21,550,000	1,341,360	447,501	619,[illegible]	76,[illegible]	644,000	699,360	31	1,750,000	"	"
Central	64,249	30,666,000	2,283,067	464,895	1,672,861	146,261	1,128,000	1,155,067	27	1,930,000	333,067	97
South	190,788	333,611,000	7,011,589	3,169,228	3,391,708	446,655	4,784,000	2,227,589	51	9,300,000	Surplus	Perpetual
Pacific Coast	66,685	191,772,000	3,444,331	2,436,876	500,515	506,941	680,000	2,764,331	69	3,060,000	[illegible]	5,002
North Rocky Mountains	32,329	47,758,000	566,328	226,570	60,620	279,138	416,000	150,328	318	930,000	Surplus	Perpetual
South Rocky Mountains	30,570	33,323,000	181,425	93,918	34,466	53,041	199,000	Surplus8/	Perpetual	830,000	"	"
U. S. Total	494,898	466,719,000	16,351,207	7,103,970	7,436,438	1,810,699	6,912,000	7,439,207	95	19,130,000	"	"

On Saw Timber Area Only - Saw Timber Size Trees Only — Gross Drain (Average 1925-1929)

Region	Area (M Acres)1/	Stand (M Ft B M)2/	Total (M Ft B M)	Lumber (M Ft B M)10/	Other Forest Products (M Ft B M)11/	Fire, etc. (M Ft B M)12/	Current Annual Growth (M Ft B M)9/	Net Drain (M Ft B M)	Number of Year's Supply at 1925-1929 Ave Drain5/	Possible Annual Growth (M Ft B M)13/	Prospective Net Drain (M Ft B M)	Number of Year's Supply at 1925-1929 Ave Drain7/
	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
New England	33,460	7,87[illegible],000	1,904,797	774,307	873,520	256,970	764,000	1,140,797	52	1,582,412	312,385	185
Middle Atlantic	7,294	6,160,000	1,042,845	[illegible]	516,047	21,374	575,000	467,845	51	843,218	139,667	187
Lake	6,095	16,487,000	2,747,810	1,972,[illegible]	736,888	39,003	716,[illegible]	2,031,810	10	316,217	2,432,593	15
Central	21,724	26,0[illegible]	4,[illegible],090	1,975,[illegible]	2,678,616	71,298	777,000	4,795,090	7	1,243,[illegible]	4,281,158	6
South	57,765	160,297,000	26,[illegible]	16,[illegible]	8,907,287	806,840	6,799,000	19,[illegible]	10	17,032,880	13,106,383	12
Pacific Coast	44,140	1,041,678,000	19,718,[illegible]	17,728,804	2,677,474	2,312,713	1,784,000	16,935,463	62	6,032,500	10,688,063	97
North Rocky Mountains	17,026	140,788,000	2,448,335	1,393,741	198,000	667,496	576,000	1,872,135	74	1,287,902	1,170,445	125
South Rocky Mountains	22,741	135,9[illegible]	687,712	456,[illegible]	85,676	117,651	349,000	268,317	469	840,558	Surplus8/	Perpetual
U. S. Total	178,265	[illegible]	59,133,645	36,162,072	18,474,[illegible]	4,492,395	11,731,000	47,402,645	35	25,181,107	33,782,497	40

On Entire Commercial Forest Area — Gross Drain (Average 1929-1934)

Region	Area (M Acres)1/	Stand (M Cu Feet)2/	Total (M Cu Feet)	Lumber (M Cu Feet)14/	Other Forest Products (M Cu Feet)15/	Fire, etc. (M Cu Feet)16/	Current Annual Growth (M Cu Feet)4/	Net Drain (M Cu Feet)	Number of Year's Supply at 1929-1934 Ave Drain5/	Possible Annual Growth (M Cu Feet)6/	Prospective Net Drain (M Cu Feet)	Number of Year's Supply at 1929-1934 Ave Drain7/
	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
New England	27,273	25,830,000	436,937	97,941	256,126	86,683	417,000	9,937	[illegible]	890,000	Surplus	Perpetual
Middle Atlantic	27,136	22,649,000	467,083	62,630	340,968	63,485	434,000	Surplus 8/	Perpetual	1,040,000	"	"
Lake	55,695	21,550,000	621,286	192,481	352,320	76,535	644,000	" 8/	"	1,750,000	"	"
Central	64,249	30,666,000	1,320,625	241,628	683,056	106,241	1,128,000	192,625	159	1,930,000	"	"
South	190,785	333,611,000	3,866,913	1,627,172	1,691,086	548,655	4,784,000	Surplus 8/	Perpetual	9,300,000	"	"
Pacific Coast	66,685	191,772,000	2,270,607	1,463,313	300,553	506,941	680,000	1,590,607	121	3,060,000	"	"
North Rocky Mountains	32,329	47,748,000	438,820	125,976	33,706	279,138	416,000	22,820	2,093	930,000	"	"
South Rocky Mountains	30,570	33,323,000	141,376	64,584	23,701	53,041	199,000	Surplus 8/	Perpetual	870,000	"	"
U. S. Total	494,898	466,719,000	9,561,998	3,871,571	3,881,520	1,810,499	6,912,000	651,998	734	19,130,000	"	"

On Saw Timber Area Only - Saw Timber Size Trees Only — Gross Drain (Average 1929-1934)

Region	Area (M Acres)1/	Stand (M Ft B M)2/	Total (M Ft B M)	Lumber (M Ft B M)18/	Other Forest Products (M Ft B M)17/	Fire, etc. (M Ft B M)16/	Current Annual Growth (M Ft B M)9/	Net Drain (M Ft B M)	Number of Year's Supply at 1929-1934 Ave. Drain5/	Possible Annual Growth (M Ft B M)20/	Prospective Net Drain (M Ft B M)	Number of Year's Supply at 1929-1934 Ave. Drain7/
	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
New England	33,460	67,878,000	1,148,667	477,798	403,896	256,970	764,000	424,667	175	1,582,412	Surplus 8/	Perpetual
Middle Atlantic	7,294	26,150,000	576,582	284,785	270,468	21,326	474,000	1,582	16,530	843,218	" 8/	"
Lake	6,091	33,887,000	[illegible]	248,015	316,788	39,003	116,000	1,287,677	33	316,217	888,[illegible]	40
Central	21,226	26,672,000	3,036,788	1,074,707	1,897,783	71,298	777,000	2,311,788	15	1,243,992	1,794,852	19
South	57,765	149,797,000	13,761,707	7,860,450	[illegible]	406,840	4,739,000	4,962,737	29	12,932,880	828,827	240
Pacific Coast	44,140	1,041,628,000	12,164,012	8,744,009	1,607,790	2,312,213	1,785,000	10,379,012	100	6,032,500	4,131,[illegible]	252
North Rocky Mountains	17,076	140,788,000	1,751,313	773,829	310,591	667,494	576,000	1,175,313	124	1,287,902	488,221	115
South Rocky Mountains	22,741	135,856,000	488,755	318,222	8,882	117,651	389,000	99,695	126	840,552	Surplus8/	Perpetual
U. S. Total	178,645	1,607,803,000	34,174,308	19,844,357	6,837,850	4,492,395	11,731,000	22,441,308	73	25,181,107	4,170,064	204

1/ Table I
2/ Table II
3/ Table VIII
4/ Table IX
5/ Assuming no increased growth over the condition existing in 1925-1929 as a result of better fire protection, better insect and disease control and the release of leads for growth by rem[illegible] of mature and over-mature timber; nor quicker and surer reproduction as a result of leaving seed trees or selective logging.
6/ Table XV - "The Forest Situation in the U S" - Special report to the Timber Conservation Board by the U. S. Forest Service, January 30, 1932, based upon removing the mature stand and releasing the land for reproduction, also reasonable fire protection and the leaving of seed trees after logging (Crude forestry provisions of Lumber Code). Expected growth per acre from unpublished report of the Timber Conservation Board
7/ After all mature saw timber is removed and normal growth is established on cut-over area.
8/ Surplus deducted from U. S. Total Net Drain
9/ Table III
10/ Table V
11/ Table VI
12/ Table VII. Sum of fire and insect, disease, etc. columns.
13/ Col. 22 (a) : Col. 19 :: Col. 10 : Col. 7.
14/ Col. 24 (a) : Col. 40 :: Col. 4 : Col. 16
15/ Col. 29 (a) : Col. 28 : Col. 5 : Col. 4
16/ Average 1925-1929 fire, disease, insect, etc., losses assumed as no data available for 1929-1934 period. See Table VII.

18/ Table V(b)
19/ Col. 41 (a) : Col. 17 :: Col. 40 : Col. 16
20/ Col. 44 (a) : Col. 34 :: Col. 43 : Col. 31

TABLE 2 - STUMPAGE PRICES BY STATES AND REGIONS 1/

Total Quantity Sold - Total Price Received
Average Price Received (1934-1933)

State & Region	All Woods			Softwoods			Hardwoods		
	Total Quantity Sold M. Ft. B.M.	Total Price Received	Average Price Received Per M. Ft. B.M.	Total Quantity Sold M. Ft. B.M.	Total Price Received	Average Price Received Per M. Ft. B.M.	Total Quantity Sold M. Ft. B.M.	Total Price Received	Average Price Received Per M. Ft. B.M.
New England									
Connecticut	49,324	$ 298,446	$ 6.05	4,911	$ 32,854	$ 6.69	24,897	$ 144,846	$ 5.82
Maine	292,865	5,846,033	7.00	720,046	5,350,159	7.29	47,759	192,078	4.02
Massachusetts	140,843	979,064	6.95	74,936	579,251	7.73	8,587	57,763	6.14
New Hampshire	361,541	2,431,481	6.69	245,665	1,759,290	7.16	13,099	70,705	5.40
Rhode Island	2/	2/	2/	2/	2/	2/	2/	2/	2/
Vermont	576,574	3,500,146	6.07	35,898	199,282	5.55	371,663	1,467,016	5.00
Total	1,937,171	12,857,572	6.64	1,081,446	7,820,836	7.23	466,991	2,932,437	4.98
Middle Atlantic									
Delaware	8,086	54,661	6.76	4,726	33,980	7.19	1,669	13,768	8.30
Maryland	98,862	606,720	6.14	49,669	340,399	6.85	33,507	174,919	5.22
New Jersey	2/	2/	2/	2/	2/	2/	2/	2/	2/
New York	326,661	2,106,405	6.45	17,532	122,749	8.14	144,408	1,056,557	7.32
Pennsylvania	469,956	3,149,802	6.70	37,097	284,752	7.66	306,238	2,043,111	6.67
Total	903,567	5,917,208	6.55	109,024	801,880	7.36	485,827	3,294,355	6.77
Lake									
Michigan	1,440,109	9,184,053	6.35	198,127	1,623,204	4.06	696,900	5,335,614	7.66
Minnesota	912,330	5,900,000	6.47	817,842	5,704,958	6.98	72,214	116,137	1.84
North Dakota	2/	2/	2/	2/	2/	2/	2/	2/	2/
Wisconsin	1,084,057	6,762,215	6.24	78,127	322,241	4.12	90,085	708,183	7.86
Total	3,436,496	21,826,278	6.35	1,294,137	7,650,403	5.91	859,199	6,161,934	7.17
Central									
Illinois	14,712	212,621	14.47	2/	2/	2/	12,362	204,621	16.55
Indiana	146,387	2,797,098	16.36	2/	2/	2/	80,588	1,412,393	15.77
Iowa	2/	2/	2/	-	-	-	2/	2/	2/
Kentucky	207,090	1,039,360	5.02	2,804	8,241	3.74	197,593	988,027	5.00
Missouri	230,502	1,136,160	4.93	72,852	350,077	4.81	66,802	361,132	5.25
Ohio	210,109	2,167,167	10.31	193	1,340	6.94	206,801	2,159,543	10.34
Tennessee	650,294	3,477,517	5.29	47,026	194,110	4.13	193,407	1,317,390	6.81
West Virginia	1,223,861	6,090,604	4.98	8,570	25,574	2.98	450,726	1,978,515	4.39
Total	2,683,911	16,442,727	6.14	130,845	579,342	4.42	1,251,279	8,421,621	6.73
South									
Alabama	2,033,486	8,680,615	4.27	1,216,444	4,602,184	3.94	80,674	367,344	4.54
Arkansas	2,314,111	12,999,604	5.62	831,851	4,350,663	5.23	261,291	1,803,733	6.37
Florida	2,782,596	15,384,395	5.53	2,705,101	15,128,765	5.59	21,382	55,193	2.58
Georgia	967,629	3,766,552	3.89	629,703	2,226,933	3.54	22,664	91,096	4.02
Louisiana	2,830,424	17,235,613	6.09	1,159,810	6,995,318	5.97	489,381	2,859,028	5.84
Mississippi	2,608,566	12,549,507	4.81	1,665,101	9,103,097	4.88	137,440	657,604	4.78
North Carolina	1,244,355	5,519,600	4.44	749,202	3,478,378	4.84	188,549	825,783	4.49
Oklahoma	775,390	2,304,550	2.97	577,661	1,552,887	2.69	42,363	112,095	2.65
South Carolina	1,772,693	6,306,495	4.55	568,776	2,842,214	5.00	95,395	317,473	3.33
Texas	3,672,374	24,899,272	6.85	1,933,095	15,607,507	8.07	150,994	729,486	4.83
Virginia	981,397	5,076,934	5.13	350,827	1,741,022	4.96	149,416	695,550	4.66
Total	21,543,219	114,647,537	5.32	12,549,801	67,759,008	5.36	1,461,789	8,539,795	4.33
Pacific									
California	14,445,464	44,496,302	3.07	14,445,464	44,496,018	3.07	1/	1/	1/
Oregon	28,742,465	77,935,167	2.71	28,716,652	77,877,791	2.71	23,663	54,551	2.31
Washington	27,766,464	85,162,060	3.18	27,755,911	86,140,474	3.18	7,879	18,179	2.31
Total	70,954,393	210,595,529	2.97	70,957,917	210,515,883	2.97	31,542	72,730	2.31
No. Rocky Mt.									
Idaho	2,133,991	7,867,117	3.69	2,127,926	7,853,192	3.69	-	-	-
Montana	1,151,081	1,865,824	1.62	1,151,016	1,865,521	1.62	65	103	1.58
Total	3,285,072	9,732,941	2.96	3,278,941	9,718,825	2.96	65	103	1.58
So. Rocky Mt.									
Arizona	2/	2/	2/	2/	2/	2/	2/	2/	2/
Colorado	2/	2/	2/	2/	2/	2/	2/	2/	2/
Nevada	2/	2/	2/	2/	2/	2/	2/	2/	2/
New Mexico	2/	2/	2/	2/	2/	2/	2/	2/	2/
South Dakota	2/	2/	2/	2/	2/	2/	2/	2/	2/
Utah	2/	2/	2/	2/	2/	2/	2/	2/	2/
Wyoming	2/	2/	2/	2/	2/	2/	2/	2/	2/
Total	2/	2/	2/	2/	2/	2/	2/	2/	2/
TOTAL ALL STATES	1,404,788,865	352,097,566	3.74	89,442,181	308,845,978	3.48	4,756,472	28,801,535	6.05

State & Region	All Woods			Softwoods			Hardwoods		
	M. Ft. B.M. Sold Quantity Total	Received Price Total	Per M. Ft. B.M. Price Received Average	M. Ft. B.M. Sold Quantity Total	Received Price Total	Per M. Ft. B.M. Price Received Average	M. Ft. B.M. Sold Quantity Total	Received Price Total	Per M. Ft. B.M. Price Received Average

1/ State figures were furnished by the U. S. Forest Service to FRA in the spring of 1934 for the purpose of calculating costs under the Code. The regional stumpage prices were arrived at by totaling the quantity and value of sales by states for a region and dividing the total value by the total quantity. Flat rate mixed sales of softwoods and hardwoods have not been listed in the table, but were taken into consideration by the Forest Service in compiling the figures here given for "All Woods". No figures were furnished by the Forest Service for the states in the South Rocky Mountain region because of the small amount of commercially owned timber located therein. Where no figures are given for other states the omission is for the same reason.
It should be noted that Dept. of Agriculture, Miscellaneous Publication #216, (in press), entitled "Forest Taxation in the United States", calls attention to the fact that much stumpage is purchased at less than the usual reported price, because, either due to inaccessibility or to partial growth, it is not ready for conversion into lumber. Conversely, those sales reported are usually of full growth timber, easily available. The stumpage figures given in the above publication were, therefore, compiled on the basis of a reduction of 25% in the eastern and central states except Maine. In Maine, the Rocky Mountain, and the Pacific states, a reduction of 40% was made, except for a 50% reduction in Oregon.
The figures in this table have not been so reduced.
2/ Not determined.
3/ Negligible.
4/ Flat rate mixed softwoods not included.

TABLE 1 (a) - STUMPAGE PRICES 1/

(Per thousand foot board measure)

	1928			1929			1930			1931			1932			1933		
	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate
Alabama	$3.18	$8.38	$8.05	$3.07	$8.43	$3.48 2/	$3.26	$8.39	$3.51 2/	$3.09	$8.18	$4.40 3/	$2.10	$3.12	$2.28	$3.42	$3.48	$3.33 2/
Arizona	—	—	—	—	—	—	2.44	—	2.44	2.15	—	2.15	2.42	—	2.42	2.39	—	2.39
Arkansas	4.76	8.57	6.78	4.22	4.72	4.66 2/	3.55	3.35	3.75 3/	3.14	4.03	3.28	1.95	3.39	1.55	2.78	4.22	2.90 3/
California	2.35	—	2.35	2.47	—	2.47 2/	2.77	4.00	2.77 2/	3.01	—	3.01 2/	2.47	3.00	2.47 2/	2.08	—	2.08 2/
Colorado	—	—	—	—	—	—	3.05	1.00	3.04	2.54	—	2.54	3.21	—	3.21 3/	2.10	—	2.10
Connecticut	8.29	8.18	7.86	4.66	5.20	4.52	5.78	5.57	5.32	4.73	5.75	4.96	13.00	4.58	6.90	3.54	4.29	4.25
Delaware	—	6.39	6.39	—	—	—	6.41	6.23	7.16	4.15	13.00	4.68	4.75	10.00	5.40	—	—	4.83
Florida	4.52	3.95	6.21	7.82	8.73	7.63 2/	6.82	3.73	5.77 3/	5.77	4.00	5.72 3/	5.32	—	5.29	4.95	1.51	4.57 3/
Georgia	3.66	3.58	3.66	3.95	4.22	4.54 2/	3.11	4.94	4.35 2/	3.15	2.76	3.51	2.90	3.40	2.88	2.87	3.66	2.98 3/
Idaho	3.84	—	3.78	3.82	—	3.22 2/	2.89	—	2.29 3/	2.39	—	2.39	2.74	—	2.78	4.47	—	4.47 2/
Illinois	—	—	—	—	—	—	—	6.71	6.71	—	15.17	15.17	—	23.53	23.53	—	6.48	6.48
Indiana	—	16.16	16.76	—	16.90	16.90	—	13.35	13.39	—	11.57	11.57	—	6.01	6.01	—	11.75	11.75
Iowa	—	3.84	3.84	—	—	—	—	8.57	8.57	—	2.00	2.00	—	14.29	14.29	—	—	—
Kansas	—	6.29	6.29	—	29.53	29.53	—	—	—	—	—	—	—	—	—	—	4.00	4.00
Kentucky	—	6.13	5.76	3.81	5.69	5.39	3.79	6.53	6.34	—	4.44	4.45 3/	—	4.38	4.33 3/	3.00	5.66	6.53
Louisiana	4.32	7.57	6.28	6.82	4.53	7.55 2/	4.52	3.49	4.39 2/	4.04	3.11	3.96	4.25	2.78	3.47	3.44	4.24	4.25
Maine	6.66	5.13	6.45	6.44	4.55	6.30 3/	6.44	5.80	6.51 3/	7.25	5.58	7.51	6.17	5.24	6.23	4.16	4.57	3.95 3/
Maryland	6.41	5.57	6.32	6.11	5.40	5.91	4.69	4.88	5.05	4.84	3.77	3.86	5.25	3.53	4.60	4.51	5.15	4.90
Massachusetts	8.60	6.39	6.87	7.08	5.18	6.43	7.52	8.14	7.28	7.14	7.29	7.17	9.10	6.66	8.62	5.06	4.00	4.81
Michigan	4.07	8.36	6.44	3.64	10.33	6.17 2/	2.85	7.11	5.55 3/	2.51	7.20	5.66	2.05	6.42	5.49	2.44	6.29	4.69 3/
Minnesota	4.11	2.73	3.57	4.57	1.46	3.67	2.60	2.89	3.29	3.16	3.58	4.63	1.52	1.00	1.85	2.40	3.11	2.96
Mississippi	—	4.21	—	4.24	6.23	4.55 2/	3.73	5.62	4.47 3/	2.55	4.55	3.46	7.83	3.53	7.34 3/	3.53	3.50	3.46 3/
Missouri	3.59	3.72	3.70	4.05	7.94	6.28	4.00	3.56	3.95	1.57	12.72	10.16	1.12	8.54	2.08	3.76	2.89	2.44
Montana	1.16	—	1.16	2.84	—	2.84 3/	1.85	—	1.85 3/	1.79	2.60	1.79 3/	2.84	—	2.84	1.41	—	1.41
Nebraska	—	—	—	—	—	—	—	—	—	—	—	—	2.00	—	2.00	—	—	—
New Hampshire	8.15	7.08	7.48	6.75	4.59	5.58	6.02	4.72	6.92 3/	5.14	4.23	4.57	5.54	3.59	3.64	4.50	4.91	4.11
New Jersey	8.33	10.22	9.49	4.00	12.15	11.96	—	14.90	14.90	—	10.67	10.67	—	10.00	10.00	—	10.00	10.00
New Mexico	—	—	—	—	—	—	2.58	—	2.58	2.18	—	2.18	2.29	—	2.29	2.10	—	2.10
New York	8.57	11.38	8.84	10.51	6.23	4.17 3/	5.57	6.77	7.16	6.29	5.35	5.84	5.28	6.40	6.26	6.57	7.07	6.18
North Carolina	5.82	4.73	5.30	5.84	4.18	5.04 2/	4.20	3.65	4.11 3/	2.82	3.39	3.04 3/	3.65	2.78	3.71 3/	3.53	2.72	3.39 3/
Ohio	5.00	11.85	11.62	5.00	10.78	10.77	5.00	9.83	9.15	10.00	7.39	8.00	—	6.43	6.43	—	7.53	7.52
Oklahoma	3.21	2.50	3.15	2.77	3.03	2.79 3/	2.66	2.26	2.63	1.76	2.09	1.83	1.68	2.50	1.73 2/	2.02	4.39	2.84
Oregon	2.91	—	2.91	2.94	—	2.94 2/	2.32	2.05	2.32 2/	2.12	1.27	2.12 2/	1.71	2.50	1.72	1.39	1.05	1.39 2/
Pennsylvania	6.34	6.44	6.62	8.54	7.66	7.52	7.34	5.57	6.07 3/	5.28	5.36	5.28	10.71	5.87	6.18	5.36	4.25	5.02
Rhode Island	6.50	6.50	5.16	4.00	4.00	4.00	6.57	4.74	5.44	5.02	5.75	5.13	5.00	4.59	4.84	5.00	7.67	6.32
South Carolina	5.21	1.54	4.70	5.35	3.07	7.64 2/	4.62	3.61	3.57 3/	3.57	3.53	3.47	2.15	2.04	1.58	2.96	3.77	3.29 3/
South Dakota	—	—	—	—	—	—	—	—	—	—	—	—	4.22	—	4.22	3.87	—	3.87
Tennessee	—	5.66	—	6.64	8.51	5.60 2/	2.02	6.97	6.14 3/	4.14	4.76	4.75	2.50	5.32	2.77	3.15	4.57	4.04
Texas	3.66	4.38	5.24	4.30	5.15	5.46 2/	5.11	5.57	4.87 2/	2.83	1.29	2.94	2.15	4.95	2.90	1.06	2.14	3.51
Utah	—	—	—	—	—	—	—	—	—	—	—	—	2.53	—	2.53	2.50	—	2.50
Vermont	6.84	4.87	4.83	4.77	5.02	4.78	5.67	7.96	5.16	7.08	5.79	5.64	6.00	4.83	5.94	5.16	4.70	4.76
Virginia	5.58	3.02	4.53	5.54	4.17	4.49 3/	4.74	5.20	4.78 2/	3.14	4.46	3.59	2.51	3.13	2.71	3.36	3.21	3.17 3/
Washington	2.89	1.93	2.89	3.15	1.74	3.15 2/	2.73	2.15	2.73 2/	2.52	1.40	2.52 2/	2.52	5.52	2.52 2/	2.09	1.57	2.29 2/
West Virginia	—	4.57	5.90	5.64	3.49	5.51 2/	2.57	4.48	4.71 3/	3.00	4.00	3.58 2/	3.00	1.67	4.01	1.79	3.97	3.48
Wisconsin	3.71	5.81	4.13	4.33	0.78	4.17 3/	1.53	4.07	3.79	2.17	5.08	3.47	0.00	4.00	3.45	3.84	7.73	4.93
Wyoming	—	—	—	—	—	—	1.83	—	1.83	2.50	—	2.50	2.18	—	2.18	2.74	—	2.74
Average	3.18	7.58	3.65	3.15	7.20	3.64	2.53	5.84	3.27	2.84	4.43	3.13	2.70	4.60	2.88	2.47	5.13	2.97

	1928			1929			1930			1931			1932			1933		
	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate	Softwood	Hardwood	Aggregate
	1928			1929			1930			1931			1932			1933		

1/ Weighted average stumpage prices based upon actual sales, Taken from annual statistical bulletins of the U. S. Department of Agriculture, compiled by Henry H. Steer, Senior Forest Economist, Division of Forest Economics, Branch of Research, Forest Service. Data secured through cooperation with the Bureau of the Census, Department of Commerce. "Softwoods" and "Hardwoods" columns all based upon individual and flat rate sales of softwoods and hardwoods, respectively. The "aggregate" columns are based upon all individual and flat rate sales of softwoods and hardwoods and also upon sales of mixed softwoods and hardwoods. Where prices not shown, figures are not available. Prices are indicative only, in view of the many different factors involved in the determination of stumpage prices.

2/ Based upon aggregate sales of 100,000,000 feet board measure or over.

3/ Based upon aggregate sales of from 50,000,000 to 100,000,000 feet board measure.

TABLE X (b) Stumpage Prices-Selected States and Periods[1/]

Softwoods

State	1928-1930 Inclusive			1931-1933 Inclusive			1928-1933 Inclusive		
	Total Volume Sold M feet B.M.	Total Price Received	Average Price Received per M feet B M.	Total Volume Sold M feet B.M.	Total Price Received	Average Price Received per M feet B.M.	Total Volume Sold M feet B.M.	Total Price Received	Average Price Received per M feet B.M.
Alabama	330,397	$ 1,037,665	$ 3.14	168,412	$ 593,205	$ 3.52	498,809	$ 1,630,870	$ 3.27
California	2,738,017	7,113,425	2.60	1,499,264	4,039,302	2.69	4,237,281	11,152,727	2.63
Florida	223,406	1,608,102	7.20	134,935	726,575	5.38	358,341	2,334,677	6.52
Idaho	297,951	917,069	3.08	185,251	696,133	3.76	483,202	1,613,202	3.34
Louisiana	194,526	1,020,523	5.25	48,205	189,019	3.92	242,731	1,209,542	4.98
North Carolina	247,576	1,269,747	5.13	162,823	555,963	3.41	410,399	1,825,710	4.45
Oregon	12,777,897	36,567,010	2.86	2,054,248	3,616,865	1.76	14,832,145	40,183,875	2.71
Texas	390,513	1,777,775	4.55	64,096	176,492	2.75	454,609	1,954,267	4.30
Virginia	111,905	595,406	5.32	83,552	269,153	3.22	195,457	864,559	4.42
Washington	7,220,931	21,712,806	3.01	2,493,655	6,015,480	2.41	9,714,586	27,728,286	2.85

Hardwoods

	1928-1930 Inclusive			1931-1933 Inclusive			1928-1933 Inclusive		
	Total Volume Sold M feet B.M.	Total Price Received	Average Price Received per M feet B.M.	Total Volume Sold M feet B.M.	Total Price Received	Average Price Received per M feet B.M.	Total Volume Sold M feet B.M.	Total Price Received	Average Price Received per M feet B.M.
Michigan	220,600	$ 1,963,631	$ 8.90	46,178	$ 296,552	$ 6.42	266,778	$ 2,260,183	$ 8.47
Mississippi	27,769	163,859	5.90	9,952	38,349	3.85	37,721	202,208	5.36
Ohio	81,837	858,947	10.50	39,930	301,108	7.54	121,767	1,160,055	9.53
Pennsylvania	96,882	645,268	6.66	61,122	315,332	5.16	158,004	960,600	6.08
Tennessee	54,955	439,506	8.00	17,526	80,220	4.58	72,481	519,726	7.17
West Virginia	145,167	574,688	3.96	196,500	782,918	3.98	341,667	1,357,606	3.97

1/ Furnished by H. B. Steer, Senior Forest Economist, Division of Forest Economics, Branch of Research, Forest Service. Secured by Forest Service through cooperation with the Bureau of the Census, Department of Commerce.

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TABLE II - FIRE PROTECTION EXPENDITURES - FOREST AREA PROTECTED AND UNPROTECTED - CHARGE AGAINST PRODUCTION AND STAND

Region and State	(1) Total State and Private Forest Area Protected 1934 1/ (Acres)	(2) Total State and Private Forest Area Unprotected 1934 1/ (Acres)	(3) Estimated Non-cooperative Private Fire Expenditures 1934 2/	(4) Cooperative Fire Protection Expenditures (Fiscal Year 1935) On State and Privately Owned Lands: Forest Service 3/	(5) State 4/	(6) Private 4/	(7) Total	(8) Total Estimated Expenditures For Fire Protection (State and Private) 5/	(9) Estimated Cost of Complete Fire Protection (State and Private Lands) 6/	(10) Per Cent of Actual Estimated Expenditures to Estimated Required Expenditures (State and Private) 7/
New England:										
Connecticut	1,789,000	none	$ 3,000.00	$ 15,328.65	$ 75,196.36	$ 1,815.80	$ 92,340.81	$ 95,340.81	$ 76,000.00	125
Maine	15,002,816	none	15,000.00	45,077.85	186,637.75	-	231,715.60	246,715.60	342,000.00	72
Massachusetts	3,300,000	none	86,400.00	30,655.39	67,973.92	-	98,629.31	185,029.31	169,000.00	109
New Hampshire	4,740,476	none	10,000.00	17,160.35	40,437.94	4,855.74	62,454.03	72,454.03	131,000.00	55
Rhode Island	280,000	none	3,000.00	2,230.05	15,391.65	-	17,621.74	20,621.74	17,000.00	121
Vermont	3,750,000	none	5,000.00	6,131.93	7,196.12	2,963.94	16,291.99	21,291.99	57,000.00	37
Total	28,862,292	none	122,400.00	116,584.26	392,833.74	9,635.48	519,053.48	641,453.48	792,000.00	81
Middle Atlantic:										
Delaware	325,000	none	-	1,560.74	5,709.38	-	7,270.12	7,270.12	12,000.00	61
Maryland	2,223,000	none	10,000.00	12,596.12	40,386.48	251.04	53,233.64	63,233.64	73,000.00	87
New Jersey	1,906,000	none	-	32,770.46	96,444.99	-	129,215.45	129,215.45	128,000.00	101
New York	10,258,680	1,430,260	6,500.00	80,033.50	258,458.08	-	338,491.58	344,991.58	378,000.00	91
Pennsylvania	13,000,000	none	10,000.00	6,114.45	246,817.48	-	252,931.93	262,931.93	364,000.00	72
Total	27,712,680	1,430,260	26,500.00	133,075.27	647,816.41	251.04	781,142.72	807,642.72	955,000.00	85
Lake:										
Michigan	20,819,780	none	25,000.00	111,940.35	422,024.81	-	533,965.16	558,965.16	662,000.00	84
Minnesota	23,049,756	none	10,000.00	97,333.69	374,245.14	-	471,578.83	481,578.83	697,000.00	69
North Dakota	27,345	none	-	-	-	-	-	-	none	-
Wisconsin	12,359,575	none	25,000.00	75,505.71	297,502.57	-	373,008.28	398,008.28	390,000.00	102
Total	56,252,456	none	60,000.00	284,779.75	1,093,772.52	-	1,378,552.27	1,438,552.27	1,749,000.00	82
Central:										
Illinois	63,256	2,686,744	-	-	-	-	-	-	77,000.00	0
Indiana	861,346	1,897,588	1,000.00	6,080.48	6,246.84	-	12,327.32	13,327.32	84,000.00	16
Iowa	none	none	-	-	-	-	-	-	none	-
Kentucky	527,000	8,473,000	1,000.00	6,158.62	5,577.81	-	11,736.43	12,736.43	212,000.00	6
Missouri	444,524	15,305,476	5,000.00	-	-	-	-	5,000.00	347,000.00	1
Ohio	1,040,000	1,160,000	-	5,508.96	9,586.90	-	15,095.86	15,095.86	60,000.00	25
Tennessee	7,558,430	2,847,371	10,000.00	17,923.18	15,832.27	1,044.54	34,799.99	44,799.99	245,000.00	18
West Virginia	7,353,379	3,524,167	15,000.00	33,033.04	37,629.20	30,624.29	101,286.53	116,286.53	312,000.00	37
Total	17,847,935	35,894,346	32,000.00	68,704.28	74,873.02	31,668.83	175,246.13	207,246.13	1,337,000.00	16
South:										
Alabama	10,231,088	12,353,337	-	37,053.40	13,467.25	24,308.38	74,829.03	74,829.03	573,000.00	13
Arkansas	6,737,956	15,262,044	-	41,113.31	9,470.06	36,496.49	87,079.86	87,079.86	484,000.00	18
Florida	2,128,825	20,743,355	50.00	71,664.64	17,240.20	52,037.59	140,942.43	140,992.43	847,000.00	17
Georgia	4,924,311	18,175,689	40,000.00	67,953.88	15,514.20	78,867.15	162,335.23	202,335.23	775,000.00	26
Louisiana	5,943,569	11,956,431	10,000.00	44,161.40	51,669.35	21,881.05	117,711.80	127,711.80	434,000.00	29
Mississippi	4,271,026	15,228,974	10,000.00	22,597.28	15,188.30	7,557.59	45,343.17	55,343.17	563,000.00	10
North Carolina	10,968,068	9,651,932	59,564.00	51,848.16	40,818.07	8,104.40	100,770.63	160,334.63	632,000.00	25
Oklahoma	1,397,790	11,010,710	100.00	12,521.76	7,593.94	4,173.72	24,289.42	24,389.42	165,000.00	15
South Carolina	1,568,232	10,931,768	10,000.00	32,073.72	10,459.81	30,495.32	73,028.85	83,028.85	378,000.00	22
Texas	7,209,000	8,447,270	5,102.00	38,323.80	57,329.33	8,043.88	103,697.01	108,799.01	434,000.00	25
Virginia	10,144,360	4,926,635	670.00	34,469.03	34,443.29	2,102.94	71,015.26	71,685.26	397,000.00	18
Total	65,524,223	138,688,145	135,486.00	453,740.38	273,193.80	274,068.51	1,001,042.69	1,136,528.69	5,682,000.00	20
Pacific:										
California	24,050,226	50,000	101,406.00	209,105.25	202,464.85	239,976.88	651,546.98	752,952.98	969,000.00	78
Oregon	25,250,614	none	263,278.00	151,929.25	77,433.25	235,975.55	465,338.05	728,616.05	584,000.00	125
Washington	20,398,602	none	388,967.00	137,885.72	98,271.99	168,465.28	404,622.99	793,589.99	632,000.00	126
Total	69,699,442	50,000	753,651.00	498,920.22	378,170.09	644,417.71	1,521,508.02	2,275,159.02	2,185,000.00	104
North Rocky Mt.:										
Idaho	20,572,386	1,282,702	189,912.00	200,142.35	52,165.89	170,536.53	422,844.77	612,756.77	447,000.00	137
Montana	20,075,297	1,087,240	24,585.00	86,281.23	14,880.39	56,975.61	158,137.23	182,722.23	190,000.00	96
Total	40,647,683	2,369,942	214,497.00	286,423.58	67,046.28	227,512.14	580,982.00	795,479.00	637,000.00	125
South Rocky Mt.:										
Arizona	10,944,348	35,200	-	245.72	-	-	245.72	245.72	No estimate	-
Colorado	13,369,286	7,150,748	1,350.00	491.44	-	-	491.44	1,841.44	No estimate	-
Nevada	2,782,783	97,570	-	1,791.74	211.00	5,393.44	7,396.18	7,396.18	13,600.00	54
New Mexico	10,157,812	759,000	-	3,291.50	2,762.00	2,560.00	8,613.50	8,613.50	26,000.00	33
South Dakota	1,129,287	47,568	-	1,363.64	1,977.67	-	3,341.31	3,341.31	4,500.00	74
Utah	5,223,399	163,000	-	156.46	-	-	156.46	156.46	No estimate	-
Wyoming	9,476,031	2,593,745	-	1,140.05	-	-	1,140.05	1,140.05	No estimate	-
Total	53,082,946	10,846,831	1,350.00	8,480.55	4,950.67	7,953.44	21,384.66	22,734.66	44,100.00	52
Total All States	359,629,657	189,279,524	1,345,884.00	1,941,122.68	2,932,656.53	1,195,507.15	5,978,911.97	7,324,795.97	13,381,100.00	55

Region and State	(11) Lumber Production-Average 1929-1934 (M Feet) 8/	(12) Expenditure per M feet - Charging Entire Cost to Average Lumber Production 1929-1934 9/	(13) Expenditure per M feet - Charging 75% to Lumber's Share of Total Forest Products Drain Average 1929-1934 10/	(14) Annual Charge per M feet Against Total Saw Timber Industrially Owned 11/	(15) Annual Charge per M feet against Total Saw Timber Privately Owned 12/	(16) Non-Cooperative Federal Fire Protection Expenditures: Forest Service 13/	(17) Indian Service 14/	(18) National Parks 15/	(19) Total	(20) Total Annual Fire Protection Expenditures in U.S. 16/	(21) Annual Charge Against Total Stand of Saw Timber per M feet 17/
New England:											
Connecticut	14,563	$6.55	$4.91	$ .222	$ .136	-	-	-	-	$ 95,340.81	$ .131
Maine	169,540	1.46	1.10	.007	.006	703.32	-	262.00	965.32	247,680.92	.006
Massachusetts	52,727	3.51	2.63	.134	.097	-	-	-	-	185,029.31	.051
New Hampshire	130,767	.55	.41	.015	.012	10,625.58	-	-	10,625.58	83,079.61	.012
Rhode Island	4,438	4.65	3.49	.421	.234	-	-	-	-	20,621.74	.227
Vermont	65,763	.32	.24	.004	.003	1,356.46	-	-	1,356.46	22,648.47	.003
Total	437,798	1.47	1.10	.135	.116	12,685.38	-	262.00	12,947.38	654,400.86	.011
Middle Atlantic:											
Delaware	5,409	1.34	1.01	.250	.068	-	-	-	-	7,270.12	.068
Maryland	30,986	2.04	1.53	.126	.050	-	-	17.00	17.00	63,250.64	.050
New Jersey	8,759	14.75	12.06	.424	157	-	-	101.00	101.00	129,316.45	.151
New York	79,416	4.34	3.26	.030	.019	-	633.44	-	633.44	345,625.02	.019
Pennsylvania	159,718	1.65	1.24	.157	.046	14,684.12	-	57.00	14,741.12	277,673.05	.047
Total	284,288	2.84	2.13	.058	.031	14,684.12	633.44	175.00	15,492.56	823,135.28	.031
Lake:											
Michigan	300,129	1.86	1.40	.043	.034	80,430.97	-	-	80,430.97	639,396.13	.039
Minnesota	146,105	3.30	2.48	.193	.074	59,859.21	230,648.27	-	290,507.48	772,086.31	.090
North Dakota	none	-	-	-	-	-	130,855.44	-	130,855.44	130,855.44	2.470
Wisconsin	401,821	.99	.74	.063	.040	177,189.02	217,376.50	-	394,565.52	792,573.80	.073
Total	848,055	1.70	1.28	.066	.044	317,479.20	578,880.21	-	896,359.41	2,334,911.68	.065
Central:											
Illinois	18,749	-	-	-	-	19,702.12	-	-	19,702.12	19,702.12	.006
Indiana	75,728	.18	14	.123	.006	4.39	-	-	4.39	13,331.71	.004
Iowa	9,526	-	-	-	-	-	223.16	-	223.16	223.16	-
Kentucky	143,450	.09	.07	.003	.002	16,082.11	-	970.00	17,052.11	29,788.54	.005
Missouri	101,133	.05	.04	.002	.001	19,066.15	-	-	19,066.15	24,066.15	.007
Ohio	81,485	.19	.14	.012	.004	226.34	-	-	226.34	15,322.20	.004
Tennessee	339,656	.13	.10	.008	.005	9,199.66	-	4,671.00	13,870.66	58,670.65	.006
West Virginia	304,980	.38	.29	.039	.023	14,412.65	-	-	14,412.65	130,699.18	.026
Total	1,074,707	.19	.14	.012	.006	78,693.42	223.16	5,641.00	84,557.58	291,803.71	.008
South:											
Alabama	1,015,404	.07	.05	.005	.004	2,298.17	-	-	2,298.17	77,127.20	.004
Arkansas	690,670	.13	.10	.004	.004	34,240.51	-	287.00	34,527.51	121,607.37	.005
Florida	637,081	.22	.17	.010	.009	47,173.46	418.24	-	47,591.70	188,584.13	.012
Georgia	635,412	.32	.24	.016	.010	10,888.93	-	237.00	11,125.93	213,461.16	.010
Louisiana	1,160,998	.11	.08	.005	.004	13,001.67	-	-	13,001.67	140,713.47	.005
Mississippi	1,202,622	.05	.04	.004	.003	34,088.10	-	105.00	34,193.10	89,536.27	.004
North Carolina	664,253	.24	.18	.014	.009	15,797.18	67,821.33	4,354.00	87,972.51	248,307.14	.013
Oklahoma	120,073	.20	.15	.007	.007	2,148.78	65,537.30	259.00	67,945.08	92,334.50	.026
South Carolina	557,080	.15	.11	.006	.005	20,145.18	-	-	20,145.18	103,174.03	.004
Texas	774,384	.14	.11	.008	.007	5,120.75	-	-	5,120.75	113,919.76	.007
Virginia	411,473	.17	.13	.012	.007	13,513.17	-	9,414.00	22,927.17	94,612.43	.009
Total	7,869,450	.14	.11	.008	.006	198,415.90	133,776.87	14,656.00	346,848.77	1,483,377.46	.007
Pacific:											
California	1,169,188	.64	.48	.004	.004	996,437.21	298,081.32	21,155.00	1,315,673.53	2,068,626.51	.007
Oregon	2,884,280	.25	.19	.003	.003	445,408.59	285,488.60	2,903.00	733,800.19	1,462,816.24	.003
Washington	4,190,541	.19	.14	.005	.006	432,825.87	732,461.03	10,362.00	1,175,648.90	1,969,238.89	.006
Total	8,244,009	.28	.21	.004	.004	1,874,671.67	1,316,030.95	34,420.00	3,225,122.62	5,500,281.64	.005
North Rocky Mt.:											
Idaho	565,173	1.08	.81	.023	.022	1,468,623.65	39,724.97	2,449.00	1,510,797.62	2,123,554.39	.022
Montana	208,655	.88	.66	.014	.013	759,591.38	424,647.55	73,912.00	1,258,150.93	1,440,873.16	.029
Total	773,828	1.03	.77	.020	.019	2,228,215.03	464,372.52	76,361.00	2,768,948.55	3,564,427.55	.024
South Rocky Mt.:											
Arizona	96,102	-	-	.002	.002	85,992.96	630,350.35	3,371.00	719,714.31	719,960.03	.036
Colorado	49,504	.04	.03	-	-	42,320.05	30,995.51	2,058.00	75,373.56	77,215.00	.002
Nevada	18/	-	-	.017	.017	5,557.43	11,963.04	-	17,520.47	24,916.65	.032
New Mexico	102,097	08	.06	.002	.002	48,621.85	125,854.79	80.00	174,556.64	183,170.14	.013
South Dakota	38,027	.09	.07	.015	.015	74,991.72	112,986.99	87.00	188,065.71	191,407.02	.060
Utah	6,810	.02	.02	-	-	48,880.86	87,467.45	311.00	136,659.31	136,815.77	.018
Wyoming	19,682	.06	.05	-	-	117,733.25	103,666.34	8,301.00	229,700.59	230,840.64	.007
Total	312,222	.07	.05	.002	.002	424,098.12	1,103,284.47	14,208.00	1,541,590.59	1,564,325.25	.017
Total All States	19,844,357	.37	.28	.008	.007	5,270,709.52	3,624,141.97	154,226.00	9,049,077.49	16,464,247.85	.010

1/ From table entitled "Table of State, Private and Federal Forest Land in need of Protection - Calendar Year 1934" furnished by A. B. Hastings, Chief of State Cooperation, U. S. Dept. of Agriculture, Forest Service. The unprotected area includes portions of the public domain classed as "forest area".
2/ Estimates by J. B. Woods, Forester National Lumber Manufacturers Association, for 1934, based upon enquiries to State Forester, lumber industry leaders and Forest Service officials in some of the more important or doubtful regions.
3/ From Schedule 2 - A to E, "Activity Expenditures, U. S. Forest Service Fiscal Year 1935". $8.64 for Nebraska and $90,365.55 for the District of Columbia
4/ From Table 2, Report of the Chief of the Forest Service, 1935.
5/ Sum of columns 3 and 7.
6/ From table entitled "Federal Allotments to States for Forest Fire Cooperation", FC-C-M-Las, Sec. 2 - allotments - 1936 signed by B. A. Silcox Chief of Forest Service.
7/ Column 8 divided by column 9.
8/ Table V (b)
9/ Column 8 divided by column 11.
10/ 75 Per Cent of column 12.
11/ Column 8 divided by column 5 of Table III.
12/ Column 8 divided by column 4 of Table III.
13/ From Schedule 2 - A to E, "Activity Expenditures by States, Fiscal Year 1935", U. S. Forest Service. $121,202.19 expended in the District of Columbia and $564.49 expended in Nebraska included in the "Total All States".
14/ Estimate for fiscal year 1935. Secured by dividing total Indian Conservation Work Expenditures for Fire Prevention and Suppression from June, 1933, through September 31, 1935, by 2.25 and adding straight expenditures for fiscal year 1935. Data furnished by the Director, I.E.C.W., January 18, 1935. $3,103.76 in Kansas and $23,778.55 in Nebraska added to "Total All States". Includes range lands which cannot be excluded from expenditures for purely forest purposes.
15/ From "Fire Prevention and Suppression Statistics", National Park Service, Dept. of the Interior, January 9, 1936 for fiscal year 1935. $8,500 in the District of Columbia added to "Total all States".
16/ Sum of columns 8 and 19.
17/ Column 20 divided by column 1 of Table III.
18/ Included with California.

TABLE A: ESTIMATED ANNUAL TAX BURDEN ON COMMERCIAL PRIVATELY OWNED FORESTS

BY STATES AND REGIONS

(Based on 1925 Data revised to Date)

States	Estimated Privately Owned Forest Land 1/ (M Acres) (1)	Estimated Land Value Per Acre 2/ (Dollars) (2)	Total Estimated Land Value 3/ (3)	Estimated Stand: Saw Timber: Softwoods 4/ (Million Ft. B.M.) (4)	Estimated Stand: Saw Timber: Hardwoods 4/ (Million Ft. B.M.) (5)	Estimated Stand: Cordwood 4/ (Thousand Cords) (6)	Unit Stumpage Value: Saw Timber: Softwoods 5/ (Per M. Ft. B.M.) (7)	Unit Stumpage Value: Saw Timber: Hardwoods 5/ (Per M. Ft. B.M.) (8)	Unit Stumpage Value: Cordwood 6/ (Per Cord) (9)
New England									
Connecticut	1,499	$3.00	$ 4,485,000	79	627	9,603	$ 6.49	$ 5.82	$ 1.00
Maine	14,060	2.00	28,120,000	24,120	14,937	12,492	7.29	4.02	1.00
Massachusetts	3,020	3.00	9,060,000	1,358	530	9,498	7.73	6.14	1.00
New Hampshire	3,948	3.00	11,844,000	5,822	2,009	8,506	7.16	8.40	1.00
Rhode Island	267	3.00	801,000	99	29	603	16/	16/	1.00
Vermont	3,188	3.00	9,564,000	2,079	6,134	12,840	5.55	5.00	1.00
Total	25,978	2.46	63,874,000	31,573	23,470	59,450	7.83	4.98	1.00
Middle Atlantic									
Delaware	320	3.00	960,000	56	77	3,197	7.19	8.90	1.70
Maryland	2,138	3.00	6,414,000	204	1,050	13,696	6.85	5.29	1.50
New Jersey	1,877	3.00	5,631,000	426	397	6,037	16/	16/	1.00
New York	9,526	3.00	28,578,000	6,501	11,455	35,858	8.14	7.38	1.00
Pennsylvania	11,070	3.00	33,210,000	1,106	4,585	57,341	7.66	6.67	1.00
Total	24,931	3.00	74,793,000	8,273	17,558	116,129	7.36	6.87	1.00
Lake									
Michigan	16,707	2.00	33,414,000	3,428	12,817	47,657	4.08	7.66	1.00
Minnesota	16,924	2.00	33,848,000	1,469	4,523	26,572	6.98	5.64	1.00
North Dakota	480	2.00	960,000	17/	93	820	18/	16/	18/
Wisconsin	14,962	2.00	29,924,000	1,836	8,007	40,476	4.12	7.86	1.00
Total	49,073	2.00	98,146,000	7,233	25,400	115,425	5.91	7.17	1.00
Central									
Illinois	3,192	4.00	12,768,000	17/	3,111	7,430	16/	16.55	1.00
Indiana	3,425	4.00	13,700,000	17	2,146	3,183	16/	15.27	1.00
Iowa	2,358	4.00	9,432,000	17/	1,103	1,447	18/	16/	1.00
Kentucky	10,277	3.00	30,831,000	732	4,830	22,252	7.74	5.00	1.00
Missouri	16,454	2.00	32,908,000	289	3,394	15,874	4.93	5.28	1.00
Ohio	4,580	4.00	18,320,000	50	4,085	8,439	7.94	10.94	1.00
Tennessee	13,713	3.00	41,139,000	1,024	8,266	46,782	4.13	6.21	1.00
West Virginia	9,478	3.00	28,434,000	621	4,313	34,916	2.98	4.12	1.00
Total	63,471	2.95	187,532,000	2,746	31,320	145,242	4.42	6.71	1.00
South									
Alabama	21,313	3.00	63,939,000	11,484	4,122	23,283	4.94	4.54	1.00
Arkansas	20,982	3.00	62,946,000	10,366	12,342	49,140	5.23	4.77	1.00
Florida	23,005	3.00	69,015,000	19,012	2,179	34,893	5.53	2.59	1.00
Georgia	22,403	3.00	67,209,000	16,326	4,146	77,884	4.94	4.02	1.00
Louisiana	17,850	3.00	53,550,000	12,814	15,705	15,644	3.97	5.84	1.00
Mississippi	18,271	3.00	54,813,000	12,951	7,515	16,079	4.88	4.74	1.00
North Carolina	19,816	3.00	59,448,000	10,875	8,070	83,195	4.64	4.49	1.00
Oklahoma	4,224	3.00	12,672,000	2,459	1,063	5,096	2.65	2.65	1.00
South Carolina	12,372	3.00	37,116,000	9,034	3,125	40,673	5.00	4.33	1.00
Texas	12,618	3.00	37,854,000	11,745	4,404	23,940	8.07	4.81	1.00
Virginia	14,210	3.00	42,630,000	4,515	5,735	53,920	4.96	4.46	1.00
Total	187,264	3.00	561,792,000	120,461	74,656	423,613	5.45	5.08	1.00
Pacific									
California	8,814	2.00	17,628,000	177,051	17/	67	3.07	18/	0.35
Oregon	13,721	2.00	27,442,000	232,341	1,260	17,869	2.71	2.31	0.35
Washington	10,502	2.00	21,004,000	182,885	365	19,075	3.18	2.31	0.35
Total	33,037	2.00	66,074,000	592,277	1,625	37,011	2.97	2.31	0.35
North Rocky Mountain									
Idaho	4,187	2.00	8,374,000	28,090	17/	6,430	3.69	18/	0.50
Montana	3,151	2.00	6,302,000	13,711	17/	12,620	1.82	1.58	0.50
Total	7,338	2.00	14,676,000	41,731	17/	19,050	2.86	1.58	0.50
South Rocky Mountain									
Arizona	42	2.00	84,000	120	17/	17/	15/	—	—
Colorado	2,579	2.00	5,158,000	2,419	17/	3,193	15/	—	0.50
Nevada	179	2.00	358,000	448	17/	173	15/	—	0.50
New Mexico	1,092	2.00	2,184,000	4,296	17/	17/	15/	—	—
South Dakota	320	2.00	620,000	228	17/	463	15/	—	0.50
Utah	353	2.00	706,000	265	17/	189	15/	—	0.50
Wyoming	588	2.00	1,176,000	1,744	17/	1,935	15/	—	0.50
Total	5,141	2.00	10,282,000	9,516	17/	6,749	7.00	—	0.50
Total all States	396,239	$2.72	$1,077,149,000	823,760	174,529	926,119	$3.36	$2.34	—

States	Estimated Value of Forests: Timber 7/ (10)	Estimated Value of Forests: Land and Timber 8/ (11)	Estimated Ratio of Assessed to Total Value 9/ (Per Cent) (12)	Estimated Assessed Value of Forests 10/ (13)	Reduction Factors (Applied Against Timber Value) 11/ (Per Cent) (14)	Adjusted Estimated Timber Value 12/ (15)	Estimated Land Value and Adjusted Timber Value 13/ (16)	Estimated Forest Tax Burden (1% of Total Adjusted Estimated Value) 14/ (17)	Estimated Forest Tax Burden (1% of Total Unadjusted Estimated Value 15/) (18)
New England									
Connecticut	$ 13,991,890	$ 18,476,890	65.2	$ 11,677,594	25	$ 10,493,918	$ 14,978,918	$ 149,789	$ 184,769
Maine	246,965,540	275,085,540	52.0	143,044,481	40	148,179,324	176,299,324	1,762,993	2,750,855
Massachusetts	23,326,840	32,386,840	77.9	25,099,301	25	17,495,130	26,555,130	265,551	323,868
New Hampshire	46,720,120	58,564,120	76.2	44,625,859	25	35,040,090	46,884,090	468,841	585,641
Rhode Island	1,173,990	1,974,990	80.0	1,579,992	25	880,493	1,681,493	16,815	19,750
Vermont	54,468,450	64,032,450	55.0	35,217,848	25	40,851,338	50,415,338	504,153	640,325
Total	386,646,830	450,520,830	—	261,245,375		252,940,293	316,814,293	3,168,142	4,505,208
Middle Atlantic									
Delaware	4,045,140	5,005,140	77.5	3,878,983	25	3,033,855	3,993,855	39,939	50,050
Maryland	20,574,400	26,988,400	64.0	17,272,576	25	15,430,800	21,844,800	218,448	269,884
New Jersey	11,860,050	17,491,050	63.2	11,054,344	25	8,895,038	14,526,038	145,260	174,911
New York	172,626,740	201,204,740	84.8	170,621,619	25	129,470,055	158,048,055	1,580,481	2,012,047
Pennsylvania	96,417,030	129,627,030	57.8	74,924,423	25	72,312,773	105,522,773	1,055,227	1,296,270
Total	305,523,360	380,316,360	—	277,751,945		229,142,521	303,935,521	3,039,355	3,803,163
Lake									
Michigan	160,587,460	194,001,460	95.3	184,823,409	25	120,440,595	153,854,595	1,230,837	1,940,015
Minnesota	47,733,340	81,581,340	39.2	31,979,885	25	36,277,338	70,125,338	701,253	815,813
North Dakota	1,250,010	2,210,010	18/	18/	25	937,508	1,897,508	18,975	22,100
Wisconsin	110,875,340	140,799,340	[illegible]	136,012,161	25	83,156,505	113,080,505	1,130,805	1,407,993
Total	320,446,150	418,592,150	—	354,815,452		240,811,946	338,957,946	3,081,870	4,185,921
Central									
Illinois	51,974,510	64,742,510	24.1	16,084,945	25	38,980,883	51,748,883	532,489	647,425
Indiana	37,381,620	51,084,620	80.2	40,969,705	25	28,036,315	41,736,315	417,363	510,846
Iowa	8,797,110	18,229,110	12.7	2,315,097	25	6,597,833	16,029,833	160,298	182,291
Kentucky	49,139,680	79,970,680	85.2	68,135,019	25	36,854,760	67,685,760	676,858	799,707
Missouri	55,082,990	87,990,990	70.9	62,385,328	25	41,311,943	74,219,943	742,199	879,906
Ohio	51,044,900	69,364,900	70.2	48,694,159	25	38,283,675	56,603,675	566,037	693,649
Tennessee	107,301,580	148,440,580	69.4	103,017,762	25	80,476,185	121,615,185	1,216,152	1,484,406
West Virginia	54,742,140	83,176,140	48.0	39,924,547	25	41,056,605	69,490,605	694,906	831,761
Total	417,466,930	604,998,930	—	381,526,542		313,100,199	500,632,199	5,006,322	6,049,989
South									
Alabama	107,214,240	171,153,240	57.2	97,899,653	25	80,410,680	144,349,680	1,443,497	1,711,532
Arkansas	182,105,120	245,051,120	27.1	66,407,495	25	136,579,090	199,521,090	1,995,211	2,450,441
Florida	113,244,190	182,259,190	24.0	43,742,206	25	84,933,143	153,948,143	1,539,481	1,822,592
Georgia	152,844,960	220,153,960	45.5	100,170,051	25	114,258,720	182,067,720	1,820,677	2,201,540
Louisiana	184,038,310	237,588,310	82.7	196,485,086	25	138,029,735	191,579,735	1,915,797	2,375,883
Mississippi	115,201,580	170,014,580	53.4	90,787,786	25	86,401,185	141,214,185	1,412,142	1,700,146
North Carolina	168,944,300	228,409,300	83.7	191,178,584	25	126,708,225	186,156,225	[illegible]	2,284,093
Oklahoma	14,580,660	27,252,660	62.3	16,974,407	25	10,935,495	23,607,495	236,075	272,527
South Carolina	116,643,250	153,759,250	24.6	37,566,057	25	87,482,438	124,598,438	1,245,984	1,537,593
Texas	139,993,470	177,847,470	48.2	85,722,481	25	104,995,103	142,849,103	1,428,491	1,778,475
Virginia	103,108,700	145,748,700	48.8	71,135,126	25	77,334,025	119,964,025	1,199,640	1,457,487
Total	1,397,861,490	1,959,653,490	—	998,073,936		1,048,246,089	1,610,038,089	14,727,042	19,514,536
Pacific									
California	543,570,020	561,198,020	55.9	313,709,493	40	326,142,012	343,770,012	3,437,700	5,611,980
Oregon	618,808,800	646,250,800	63.3	421,776,794	50	319,404,430	346,846,430	3,468,464	6,462,508
Washington	589,093,700	610,097,700	33.1	201,942,339	40	353,456,220	374,460,220	2,995,682	6,100,977
Total	1,771,472,580	1,837,546,580	—	937,428,626		999,002,662	1,065,076,662	9,901,846	18,375,465
North Rocky Mountain									
Idaho	106,508,800	114,882,800	60.0	68,929,680	40	63,905,280	72,279,280	722,793	1,148,828
Montana	28,621,820	34,923,820	34.6	11,919,340	40	17,173,092	23,475,092	234,751	349,238
Total	135,130,620	149,806,620	—	80,849,020		81,078,372	95,754,372	957,544	1,498,066
South Rocky Mountain									
Arizona	240,000	324,000	81.0	262,440	40	144,000	228,000	2,280	3,240
Colorado	6,726,500	11,884,500	31.5	3,743,618	40	4,035,900	9,193,900	91,939	118,845
Nevada	1,082,500	1,440,500	50.0	720,250	40	649,500	1,007,500	10,075	14,405
New Mexico	8,592,000	10,776,000	43.0	4,633,680	60	3,436,800	5,620,800	56,208	107,760
South Dakota	677,600	1,297,600	82.6	1,071,818	40	406,560	1,026,560	10,266	12,976
Utah	612,500	1,318,500	61.4	809,559	40	367,500	1,073,500	10,735	13,185
Wyoming	6,219,500	7,395,500	72.4	5,354,342	40	3,731,700	4,907,700	49,077	73,955
Total	24,140,600	34,422,600	—	21,621,041		12,771,960	23,053,960	230,540	344,226
Total all States	$4,758,498,580	$5,835,647,580		$3,213,394,247		$3,127,094,762	$4,204,243,762	[illegible]	$58,356,479

1/ Taken from column 1, Table 57, of Department of Agriculture Miscellaneous Publication Number 218 (in acres). The term "forest land," in connection with this estimate, refers to land bearing present timber stands that could be economically utilized and also other forest land on which present or future timber stands can be utilized under reasonably conceivable future conditions.

2/ Taken from column 2, Table 57, in the same publication, and includes the estimated average unit land value of the area in column 1, including value of young growth, if any, but excluding saw timber and cordwood. The only exceptions are the regional values, which have been calculated by dividing the total estimated land value for each region by the total estimated acreage of privately owned forest land in that region.

3/ Product of columns 1 and 2.

4/ Columns 4 to 6 are taken from columns 3 to 5, respectively, in Table 57, Bulletin Number 218, and are estimates of saw timber and cordwood, including pulpwood, standing on this land.

5/ Columns 7 and 8 are taken from columns 6 and 9, respectively, in NRA Table No. entitled "Stumpage Prices By States and Regions." These figures, which were furnished by the U. S. Forest Service, represent averages of all softwood and hardwood sales reported to the Service, except mixed softwoods and hardwoods, for the years 1924 to 1933, inclusive. For the most part these sales involved timber which was available at the time of sale for immediate or early conversion. These unit values are properly applied to estimates representing all of the standing timber only on the assumption that the carrying charges on timber not utilized for many years will be counterbalanced by increases due to growth and higher stumpage prices. The regional unit stumpage value for softwoods, South Rocky Mountain States, was taken from column 6, Table 57 of Publication 218.

6/ Taken from column 8, Table 57, of Bulletin Number 218.

7/ Equals the sum of the products of columns 4, 5, and 6, and columns 7, 8, and 9, respectively.

8/ Equals the sum of columns 3 and 10.

9/ Taken from column 3, Table 5, of Bulletin Number 328. Ratios for New Hampshire, Wisconsin, North Carolina, Washington, and Oregon were based on sales or appraisals of forest property. The ratios for the other states were based on Bureau of Census figures for 1922 (U. S. Department of Commerce, Bureau of the Census, 1925. Estimated National Wealth - Wealth, Public Debt, and Taxation, 1922, page 5). The Census figures however, are for all real estate and for the year 1922. Since forest property is ordinarily assessed at a higher ratio to true value than other real estate and since there has been a tendency for the ratio of assessed to full value to increase, certain adjustments were made by the Forest Service in the Census figures. In Michigan and Minnesota the adjustment was made on the basis of assessment ratios of forest property in Wisconsin, as determined from sales, since the assessment practice with respect to forests in Michigan and Minnesota was found to be similar to that in Wisconsin. The Census ratios of assessed to true value of real estate in Michigan and Minnesota, respectively, were multiplied by the ratio of the assessment ratio of forest property in Wisconsin to the assessment ratio of Wisconsin real estate in general as reported by the Census. In most of the Southern and South Central States and in a few States in other regions, the Census ratios were increased by 20 per cent, which is the average per cent by which the ratios of assessed to full value of forest properties in North Carolina, Washington, Oregon, and Wisconsin, as determined by the Forest Service study, exceed the Census figures for the ratios of assessed to full value of real estate in those same States. In the remaining states where the assessment ratio reported in 1922 was fairly high and where there was no reason to believe that the ratio had been substantially increased, the 1922 ratio was used without adjustment.

10/ Computed on the basis of the unadjusted values in column 11, using the ratios of assessment in column 12.

11/ The selection of any reduction factors is a matter of judgment. These factors were suggested by R. Clifford Hall, Director, Forest Taxation Inquiry, Forest Service and employed in Miscellaneous Publication Number 218 to reduce the total timber value in addition to reductions of the unit stumpage values made at the suggestion of the Directors of the Forest Experiment Stations. These reduction factors were employed on the assumption that the unit stumpage values based on sales were representative of accessible timber for immediate conversion and were too high to be applied against stands of timber now inaccessible. The unit stumpage values used in this table represent averages for the 10-year period 1924 to 1933, whereas the unit stumpage values used in Table 57 of Publication Number 218, represent averages for the 5-year period 1924 to 1928. It is felt that the 10-year averages are more representative.

12/ Column 10 reduced by factors in column 14.

13/ The sum of columns 3 and 15.

14/ Equals 1 per cent of column 16 with a reduction of 20 per cent for Washington, Michigan, and North Carolina, where especially drastic measures have been taken recently to reduce the property tax. The results are admittedly only approximations but represent the best judgment of informed men. On the basis of samples taken throughout the country in the period 1926-1930, the average property tax on forests was found to be about 2 per cent of actual (not assessed) value. However, R. Clifford Hall states that conditions have changed materially since these figures were obtained. The quantity of old-growth timber has been reduced by cutting, the value of forest lands has, in general, decreased and property taxes have, in general, been reduced. Mr. Hall suggests, therefore, the application of 1 per cent against total estimated value of forests as a means of arriving at a rough estimate of the current tax burden.

15/ Equals 1 per cent of the unadjusted estimated value of forests in column 11.

16/ Regional value used.

17/ Negligible.

18/ Undetermined.

TABLE XIII ESTIMATED ANNUAL TAX BURDEN ON COMMERCIAL PRIVATELY-OWNED RAW TIMBER AREAS, BY STATES AND REGIONS

(Based on 1929 Data Revised To Date) 1/

State and Region	Privately Owned Saw Timber Land (Thousand Acres)	Land Value Per Acre	Total Saw Timber Land Value ($1000)	Saw Timber: Softwoods (Million Ft. B. M.)	Saw Timber: Hardwoods (Million Ft. B. M.)	Unit Stumpage Value: Softwoods (Per M Ft. B. M.)	Unit Stumpage Value: Hardwoods (Per M Ft. B. M.)	Total Estimated Saw Timber Value (Thousand $)	Total Estimated Land and Saw Timber Value (Thousand $)	Ratio of Assessed to Estimated Value Per Cent	Assessed Value of Saw Timber and Land (Thousand $)	Forest Tax Burden (1% of Total Estimated Value)	Average Production 1929-1934 (M Ft. B. M.)	Forest Tax Burden Per M. Ft. B. M. of Lumber Produced
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
New England														
Connecticut	201	$3.00	603	75	627	$6.69	$5.82	4,151	4,754	63.2	3,005	$ 47,540	14,563	$3.26
Maine	9,680	2.00	19,760	24,120	14,537	7.29	4.02	234,274	254,034	52.0	132,098	2,540,340	169,540	14.98
Massachusetts	437	3.00	1,311	1,368	530	7.73	6.14	13,829	15,140	77.5	11,734	151,400	52,727	2.87
New Hampshire	757	3.00	2,271	3,822	2,009	7.16	5.40	34,392	36,663	76.2	27,937	366,630	130,767	2.80
Rhode Island	13	3.00	39	59	29	3/	3/	571	610	80.0	488	6,100	4,438	1.37
Vermont	1,973	3.00	5,919	8,079	6,138	5.55	5.00	42,228	48,147	55.0	26,481	481,470	65,763	7.32
Total	13,261	2.85	29,903	31,523	23,870	7.23	4.98	329,445	359,348	-	201,743	3,593,480	437,798	8.21
Middle Atlantic														
Delaware	32	3.00	96	36	71	7.19	6.30	846	944	77.5	732	9,440	5,409	1.75
Maryland	492	3.00	1,476	204	1,050	6.85	5.22	6,878	8,354	64.0	5,347	83,540	30,986	2.70
New Jersey	261	3.00	843	426	397	3/	3/	5,823	6,666	63.2	4,213	66,660	8,759	7.61
New York	4,626	3.00	13,878	6,501	11,455	8.14	7.32	136,769	150,647	84.8	127,749	1,506,470	79,916	18.96
Pennsylvania	1,769	3.00	5,307	1,106	4,585	7.66	6.67	39,076	44,383	57.8	25,653	443,830	159,718	2.78
Total	7,200	3.00	21,600	8,273	17,558	7.36	6.77	189,394	210,994	-	163,694	2,109,940	284,288	7.42
Lake														
Michigan	1,659	2.00	3,318	3,828	12,917	4.08	7.66	112,930	116,248	96.3	111,947	929,984	300,129	3.10
Minnesota	1,143	2.00	2,286	1,969	4,523	6.98	1.64	21,161	23,447	39.2	9,191	234,470	146,105	1.60
North Dakota	10	2.00	20	2/	53	3/	3/	417	437	3/	3/	4,370	3/	3/
Wisconsin	1,612	2.00	3,224	1,836	8,007	4.12	7.86	70,499	73,723	96.6	71,216	737,230	401,821	1.83
Total	4,424	2.00	8,848	7,233	25,500	5.91	7.17	205,007	213,855	-	192,354	1,906,054	848,055	2.25
Central														
Illinois	2,477	4.00	9,908	13	3,111	3/	16.55	51,544	61,452	28.1	14,685	614,520	18,749	32.94
Indiana	1,812	4.00	7,248	17	8,164	3/	15.77	34,201	41,449	60.2	33,242	414,490	75,728	5.47
Iowa	1,755	4.00	7,020	2/	1,107	3/	3/	7,539	14,559	12.7	1,849	145,590	9,535	15.27
Kentucky	2,761	3.00	8,283	732	4,830	3.74	5.00	26,888	35,171	85.2	29,966	351,710	143,850	2.45
Missouri	3,156	2.00	6,316	289	3,394	4.81	5.25	19,208	25,524	70.9	17,762	255,240	101,133	2.48
Ohio	2,690	4.00	10,760	50	4,065	6.94	10.34	42,586	53,346	70.2	37,379	533,460	81,485	6.53
Tennessee	4,863	3.00	14,589	1,024	8,266	4.13	6.81	60,520	75,109	69.4	52,126	751,090	339,656	2.21
West Virginia	1,405	3.00	4,215	621	8,363	2.98	4.12	19,826	24,041	46.0	11,540	240,410	304,980	.79
Total	20,921	3.27	68,339	2,746	31,320	4.42	6.73	262,312	330,651	-	198,749	3,306,512	1,074,706	3.07
South														
Alabama	7,231	3.00	21,693	16,484	8,182	3.94	4.54	83,933	105,626	57.8	60,818	1,056,260	1,015,404	1.04
Arkansas	6,708	3.00	20,124	10,366	12,362	5.23	6.37	132,960	153,084	27.1	41,486	1,530,840	690,670	2.22
Florida	5,790	3.00	17,370	13,012	2,129	3.59	18.65	46,432	95,521	24.0	[illegible]	956,210	637,081	1.50
Georgia	6,729	3.00	20,187	16,326	4,146	3.54	[illegible]	76,251	94,648	45.5	43,065	946,480	635,412	1.49
Louisiana	7,375	3.00	22,125	12,874	15,705	5.97	5.84	168,575	190,700	82.7	157,709	1,907,000	1,160,998	1.64
Mississippi	5,060	3.00	15,180	12,951	7,515	4.68	4.78	99,122	114,302	53.4	61,037	1,143,020	1,202,622	.95
North Carolina	4,019	3.00	12,057	10,675	8,070	4.64	4.49	85,786	97,823	83.7	81,878	782,580	664,253	1.18
Oklahoma	1,800	3.00	5,400	2,459	1,063	2.69	2.65	9,485	14,885	62.3	9,273	148,850	120,073	1.24
South Carolina	3,728	3.00	11,184	9,034	9,325	5.00	3.33	76,222	87,406	28.4	21,387	874,060	557,080	1.57
Texas	4,145	3.00	12,435	11,745	4,404	8.07	4.83	116,053	128,488	48.2	61,931	1,284,880	774,384	1.66
Virginia	2,635	3.00	7,905	4,535	5,735	4.96	4.66	49,219	57,124	48.8	27,877	571,240	411,473	1.39
Total	55,220	3.00	165,660	120,461	74,656	5.45	5.62	974,047	1,139,707	-	568,950	11,201,420	7,869,950	1.42
Pacific														
California	5,634	2.00	11,268	177,051	2/	3.07	3/	543,546	554,814	55.9	310,141	5,548,140	1,169,188	4.75
Oregon	8,761	2.00	17,522	232,341	1,260	2.71	2.31	632,555	650,077	63.3	411,496	6,500,770	2,884,280	2.25
Washington	4,512	2.00	9,024	182,885	365	3.18	2.31	582,417	591,441	33.1	195,767	4,731,528	4,190,541	1.13
Total	18,907	2.00	37,814	592,277	1,625	2.97	2.31	1,758,518	1,796,332	-	917,406	16,780,438	8,244,009	2.04
North Rocky Mountain														
Idaho	1,836	2.00	3,672	28,020	2/	3.69	-	103,394	107,066	50.0	64,239	1,070,660	565,173	1.89
Montana	1,718	2.00	3,436	13,711	2/	1.62	1.58	22,212	25,648	34.4	8,823	256,860	208,655	1.23
Total	3,554	2.00	7,108	41,731	2/	2.96	1.58	125,606	132,714	-	73,062	1,327,140	773,828	1.72
South Rocky Mountain														
Arizona	42	2.00	84	120	2/	3/	-	240	324	81.0	262	3,240	96,102	.03
Colorado	985	2.00	1,970	2,415	2/	3/	-	4,830	6,800	73.6	5,005	68,000	49,504	1.37
Nevada	97	2.00	194	448	2/	3/	-	896	1,090	50.0	545	10,900	3/	3/
New Mexico	1,018	2.00	2,036	4,896	2/	3/	-	8,592	10,628	43.0	4,570	106,280	102,097	1.04
South Dakota	140	2.00	280	228	2/	3/	-	456	736	82.6	608	7,360	38,027	.19
Utah	80	2.00	160	265	2/	3/	-	530	690	61.4	424	6,900	6,810	1.01
Wyoming	416	2.00	832	1,744	2/	3/	-	3,488	4,320	72.8	3,128	43,200	19,662	2.19
Total	2,778	2.00	5,556	9,516	2/	2.00	-	19,032	24,588	-	14,542	245,880	312,222	.79
Total All States	126,265	$2.73	344,828	813,760	174,529	$3.36	$ 6.34	5,863,361	6,206,189	-	2,350,900	$340,470,852	19,844,358	$2.04

State and Region	Privately Owned Saw Timber Land (Thousand Acres)	Land Value Per Acre	Total Saw Timber Land Value ($1000)	Saw Timber: Softwoods (Million Ft. B. M.)	Saw Timber: Hardwoods (Million Ft. B. M.)	Unit Stumpage Value: Softwoods (Per M Ft. B. M.)	Unit Stumpage Value: Hardwoods (Per M Ft. B. M.)	Total Estimated Saw Timber Value (Thousand $)	Total Estimated Land and Saw Timber Value (Thousand $)	Ratio of Assessed to Estimated Value Per Cent	Assessed Value of Saw Timber and Land (Thousand $)	Forest Tax Burden (1% of Total Estimated Value)	Average Production 1929-1934 (M Ft. B. M.)	Forest Tax Burden Per M. Ft. B. M. of Lumber Produced
				Saw Timber		Unit Stumpage Value								

1/ This table was prepared in the same fashion as was NRA table "Estimated Annual Tax Burden on Commercial Privately Owned Forests, by States and Regions" with the following exceptions: Column 1 represents the total of private saw timber land under the headings of "Industrial Ownership" and "Farm Woodland" in NRA table "Commercial Forest Area of the United States, by Regions, States, Classes of Ownership, and Character of Growth;" Columns 13 and 14 comprise new material, the former being taken from U. S. Census figures and the latter equaling Column 12 divided by Column 13; the reduction factors employed in the preceding table to illustrate the method employed by R. Clifford Hall in estimating forest tax burden have not been used in this table.

2/ Negligible

3/ Unit stumpage value for region used

Not determined

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TABLE XIII (a) TIMBER TAXATION AS RELATED TO PRODUCTION 1/

Industry Number	Do you think taxation is in any important degree the cause of hastening timber cutting undesirably from an industrial or community viewpoint?	Have you put any timber into Production in order to carry taxes?	If so, how much capacity to produce have you added?
3	Yes	Yes	20%
5	"	No	No
10	"	No	No
20	"		
21	"	Yes. Not operated since 1930 but if conditions do not improve soon will feel compelled to resume cutting, probably at a loss to prevent taxes eating it up.	
22	"	Intend to convert enough stumpage this year to take care of tax payments if it is possible to do so, but outlook is not very promising at present.	
24	"	Yes	50%
26	"	Yes	Produced when should have been idle.
27	"	No	No
37	"	Yes. Have speeded up production in times past account of tax pressure and expect to have to do so again if some relief is not afforded.	
39	"	Yes	25%
40	"	Yes	
47	"	Yes	25,000 M
48	"	Yes. Cut as rapidly as possible and cut out.	
52	"	Yes	20%
60	"	No	No
71	"	No	
72	"	Discontinued purchasing logs for ½ capacity and will cut our own timber as rapidly as possible.	
73	"	Yes	25 M per day
75	"	No	
82	"	No	
83	Probably on Pacific Coast Not so much in South except where timber is held for a long period.	Directors approve hastening on account of ever increasing taxes. No great increase so far.	
85	Yes	May have been partly determining factor.	
87	Yes	No	
88	Yes. - unless relief is afforded will have to keep on depleting timber supply as fast as market will absorb it.	Yes	Put on night shift
89	Yes	Yes - to carry taxes and eliminate taxes on timber as cut.	Running time increased.
92	Yes	Yes	40,000 M per year.
93	Yes	Yes	1-,000 M per year.
94	In certain heavy producing regions.	Yes - but not responsible for volume.	
96	Yes	No	Cut out and quit
98	"	Cut rapidly to carry taxes. Also sold considerable timber.	Sold some timber
100	"	Yes	
101	"	Trebled	
103	"	No	
106	"	No	
107	"	Yes	All in past years. Very little left.
109	"	No	
111	"	No	
116	"	No	
117	Undoubtedly	Discontinued buying logs or timber and cutting as rapidly as could dispose of product.	Cannot until market changes.
118	Yes	No	
119	"	Yes	

Industry Number	Do you think taxation is in any important degree the cause of hastening timber cutting undesirably from an industrial or community viewpoint?	Have you put any timber into Production in order to carry taxes?	If so, how much capacity to produce have you added?
126	Yes	Yes	
127	"	No	
131	"	Yes	Yes. Added 35,000 M per year.
131(a)	"	Began 1928	
132	"	No	
134	"	Yes	Have operated plants that would have halted except for tax burden
136	"	No	No
142	"	No	
144	"	Yes	18,000 M
147	"	Yes	Capacity is 33-1/3 to 50% more than sales
152	"	Yes	5,000 M per year.
157	"	For many years prior to past five years.	Not recently.
162	"	Yes	Push manufacturing each year as much as possible to reduce overhead of which taxes is the largest item.
163	"	"	
164	"	Yes. In 1922 realized that they could not carry supply of timber and show any profit without cutting very large amount to take care of tax overhead.	
169	"	No	
171	"	Yes	Added extra band in 1910
176	"	Yes	
177	"	No. Own no timber.	
180	"	No. Buy timber about as needed.	None
184	Difficult to say. In early days taxes not heavy but getting to be so now.	No	
186	Largest factor in present overproduction.		Probably fortunately, we have no standing timber.
188	Yes	Yes	
189	No		
191	Yes	No	No
192	Not in this section	No	
194	Yes	No	No
195	A factor in large holdings		
197	Yes	Yes	Marketing all we can as timber or lumber.
199	Yes	Yes	33%
201	Yes	Yes	
205	Yes	Has had some influence on production and may have considerably more	
42	Yes	Yes. Increased log output.	Now sawmill cutting 200 M per shift
11	Yes	No	

1/ Replies to questionnaires sent to leading lumber manufacturers on January 12, 1932.

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TABLE XIII (b) TIMBER TAXATION AS RELATED TO LUMBER PRODUCTION AND TIMBER OWNED[1]
GROSS TAXES

State	Company	Per Thousand Feet Cut: 1909	1919	Per Cent Increase or Decrease (-) From 1909	1929	Per Cent Increase or Decrease (-) From 1919	Per Thousand Feet Owned: 1909	1919	Per Cent Increase or Decrease (-) From 1909	1929	Per Cent Increase or Decrease (-) From 1919
South Carolina	39	$.031	$.141	354.8	$.501	255.3	$.005	$.065	1,200.0	$.029	55.4-
	96	-	1.451	-	1.542	6.3	-	.161	-	1.733	907.6
Florida	141	.455	2.011	342.0	2.067[2]	2.8	.007	.065	828.6	.191	193.8
	83	-	2.059	-	.898	56.4-	.013	.041	215.4	.087	112.2
	109	.259	.607	134.4	.929	53.0	.021	.051	142.9	.129	152.9
	189	-	1.953	-	1.569	19.7-	-	.078	-	.211	-
Alabama	75	.122	.482	294.3	.523	8.5	.012	.037[3]	208.3	.124	235.1
Mississippi	3	-	.7533/	-	1.556	106.9[2]	-	.077[3]	-	.508	760.0[4]
	100	.466	2.020	333.5	2.535	25.5	.020	.143	615.0	.496	246.3
	157	.629	2.301	265.8	2.480	7.8	.031	.169	509.7	.885	368.5
Louisiana	21	-	.330	-	.804	143.6	-	.104	-	.290	-
	98	.099	1.889	1808.1	1.947	3.1	-	-	-	-	-
	103	.296	1.068	260.8	2.020	89.1	.020	.166	730.0	.444	167.5
	107	.667	1.000	49.9	2.000	100.0	.100	.180	80.0	1.20	566.7
	184	-	1.094	-	1.272	16.3	-	.093	-	.173	86.0
	205	.340	1.087	219.7	1.990	83.1	.022	.095	331.8	.440	363.2
Texas	85	.750	.889	11.9	.667	25.0-	.040	.091	127.5	.182	100.0
	134	.215	.840	290.7	.932	11.1	.010	.056	460.0	.140	150.0
	191	.113	.657	481.4	1.141	73.7	.007	.059	742.9	.076	32.2
Louisiana & Texas	131	.360	.900	150.0	1.206	34.0	.024	.097	304.2	.778	702.1
Tennessee	24	-	-	-	.927	-	-	-	-	.243	-
West Virginia	171	-	7.517	-	3.678	52.4-	.032	.491	1,434.4	.440	8.6-
	176	.213	3.492	63.9	2.507	28.2-	-	.281	-	.356	26.7
Michigan	72	1.856	4.974	167.7	3.542	28.8-	.037	.120	224.3	.233	94.2
	88	-	1.061	-	2.606	141.1	.044	.147	234.1	.343	133.3
	106	.648	1.920	196.3	2.679	14.0	.372	.201	46.0-	.385	91.5
Wisconsin	87	.750	1.684	124.5	.921	45.3-	.043	.168	290.7	.967	475.6
	48	-	1.850	-	-	-	-	.369	-	7.353	1,892.7
	117	1.142	4.653	246.7	2.928	37.1-	.065	.332	410.8	.542	63.3
Minnesota	37	.527	1.729	228.1	-	-	.061	.408	568.9	-	-
	118	.393	2.069	426.5	.949[4]	54.1-	.032	.205	540.6	-	-
Washington	22	-	1.112	-	1.460	31.3	-	-	-	-	-
	101	.767	1.264	64.8	.986	22.0-	.034	.050	47.1	.101	102.0
	132	.237	.367	54.9	.506	37.9	.015	.031	106.7	.085	174.2
	147	.277	.645	132.9	.630	2.3-	.095	.168	76.8	.179	6.5
	163	-	-	-	.450	-	.01	-	-	.060	-
	188	.323	.437	35.3	.360	1.6-	.026	.184	607.7	-	-
	199	-	.417	-	.450	7.9	-	.062	-	.050	1.9-
Oregon	23	-	.300	-	.430	43.3	-	.035	-	.070	100.0
	48	-	-	-	.452	-	-	-	-	.072	-
	147	-	-	-	.547	-	.012	.014	16.7	.023	64.3
	73	-	.659	-	.770	16.8	-	.021	-	.043	104.8
	5	.270	1.223	353.0	.590	51.5-	.017	.223	1,211.8	.052	76.7-
	26	-	1.037	-	.718	69.3-	-	.006	-	.013	66.5
	66	.571	.696	22.2	1.251	79.2	.004	.006	100.0	.017	212.5
	94	.077	.261	239.0	.236	8.8-	.005	.015	200.0	.047	213.3
	1314	-	-	-	.700	-	-	-	-	.079	-
	201	-	-	-	.556	-	-	-	-	.022	-
	206	-	.625	-	.796	27.4	.006	.017	183.3	.040	135.3
California	10	-	-	-	.687	-	-	-	-	.092	-
	52	.117	.112	4.3-	.002	98.2-	.009	.015	66.7	.090	500.0
	60	-	.632	-	.874	5.0	-	.009	-	.016	77.8
	116	.077	.727	844.2	.625	14.0-	.066	.113	71.2	.256	126.3
	126	.346	.760	120.3	1.270	67.1	.008	.020	150.0	.035	75.0
	194	.154	1.080	601.3	1.530	41.7	.009	.019	111.1	.024	26.3
	197	1.110[5]	2.398	116.0	3.540	47.6	-	-	-	-	-
	208	.033	.651	1,872.7	1.030	58.2	.001	.036	3,500.0	.042	16.7
Idaho	40	1.096	1.432	30.7	1.191	16.8-	.021	.056	176.2	.106	66.2
	207	-	-	-	-	-	.002	.010	400.0	.026	160.0
	93	.615[6]	.568	9.3-[6]	.541	3.0-	.343[6]	.196	322.7[6]	.084	57.6-
	121	.866	.979	13.0	.895	8.6-	-	.020	-	.031	55.0
	160	-	.086	-	.328	279.1	-	.077	-	.077	-
	202	-	-	-	-	-	.006	.008	33.3	.029	262.5
Montana	209	-	-	-	-	-	-	.033	-	.033	-
	142	.719	1.365	89.8	1.789	31.1	.022	.051	131.8	.047	7.8-
	162	-	.253	-	.263	4.0	.019	.032	68.4	.034	6.3
Oregon, Arkansas & Alabama	92	.251	.913	263.7	1.416	55.1	.011	.067	509.1	.105	56.7

1/ Based on an investigation made in January 1932, by the National Lumber Manufacturers Association.
2/ Based on 1926 production.
3/ Based on year 1922.
4/ Based on year 1926.
5/ Based on 1907 production.
6/ Based on year 1910.

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TABLE SHOWING RELATIVE STATISTICAL* POSITION OF PRINCIPAL PRODUCING STATES FOR SOFTWOOD LUMBER 1934 AS TO CAPACITY, PRODUCTION AND STAND

REGION & STATE	(a) PRODUCTION (10 YEAR AVERAGE) RELATIVE POSITION SOFTWOOD	% OF TOTAL U. S. PRODUCTION SOFTWOOD	ANNUAL PRODUCTION SOFTWOOD M.B.M.	(b) CAPACITY (1934) RELATIVE POSITION SOFTWOOD	% OF TOTAL U.S. CAPACITY SOFTWOOD	CAPACITY M.B.M. SOFTWOOD	(c) TIMBER STAND (1934) RELATIVE POSITION SOFTWOOD	% OF TOTAL STAND SOFTWOOD	STAND M.B.M. SOFTWOOD
WESTERN									
Washington	1	24.95	5,422,108	1	17.69	9,872,000	2	21.59	320,915,000
Oregon	2	15.74	3,421,973	2	14.50	8,095,000	1	29.31	435,534,000
California	3	7.02	1,526,502	6	5.49	3,066,000	3	19.01	282,460,000
Idaho	9	3.39	737,798	13	3.38	1,891,000	4	6.50	96,592,000
Total Region		51.10	11,108,381		41.06	22,924,000		76.41	1,135,501,000
SOUTHERN									
Mississippi	4	6.82	1,481,759	4	7.15	3,993,000	14	.87	12,960,000
Alabama	5	5.80	1,260,503	3	7.17	4,005,000	10	1.13	16,799,000
Louisiana	6	5.74	1,247,617	12	3.40	1,900,000	15	.87	12,884,000
Texas	7	4.14	900,505	10	3.54	1,981,000	16	.79	11,759,000
Georgia	8	3.46	748,978	5	6.22	3,476,000	11	1.00	14,817,000
Florida	10	3.34	726,567	11	3.46	1,935,000	13	.87	13,169,000
Total Region		29.30	6,365,929		30.94	17,290,000		5.53	82,388,000
Total of Regions		80.40	17,474,310		72.00	40,214,000		81.94	1,217,889,000

Total U. S. Annual Softwood Production M. B. M. (10 year average) 21,733,539
" " " " " Capacity M. B. M. (1934) 55,905,000
" " " " " Stand M. B. M. (1934) 1,485,850,000

(a) Source: Bureau of the Census 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934 and 1935 (See Table Number 4)
(b) Source: Statistics of Mill Capacities, by Division of Research and Planning (See Table Number 5-A)
(c) Source: U. S. Forest Service "Commercial Forest Areas of the United States"

*Statistical Position: The rank of a state as compared with other states; thus in "production" and "capacity" the State of Washington ranks first having the greatest production and largest capacity of the 48 states, in amount of timber "stand" it ranks second, being surpassed in Oregon.

Table XV

Table Showing Relative Statistical Position* of Principal Lumber Producing States For Hardwood Lumber 1934
As to Capacity, Production and Stand

Region and State	Production a/ (10-Year Average) Relative Position	Per Cent of U.S. Hardwood Production	Hardwood Production Per Cent	Capacity b/ Relative Position	Per Cent of U.S. Hardwood Capacity	Hardwood Capacity M.B.M.	Stand c/ Relative Position	Per Cent Total U.S. Hardwood Stand	U.S. Hardwood Stand M.B.M.
Southern									
Louisiana	1	11.68	533,569	9	5.60	763,000	1	8.63	15,706,000
Tennessee	2	8.11	370,621	1	10.46	1,422,000	7	4.68	8,519,000
Arkansas	3	7.96	363,696	4	7.30	992,000	4	7.05	12,827,000
Mississippi	4	7.67	350,164	2	9.29	1,264,000	10	4.13	7,521,000
Alabama	8	4.33	198,002	12	3.08	419,000	19	2.40	4,377,000
Texas	11	3.43	156,852	13	2.51	342,000	18	2.42	4,406,000
Total		43.18	1,972,904		38.24	5,202,000		29.31	53,356,000
Northern									
Wisconsin	5	7.60	347,104	8	5.56	756,000	8	4.68	8,515,000
Michigan	6	7.22	329,898	11	3.82	520,000	3	7.13	12,980,000
Total		14.82	677,002		9.47	1,276,000		11.81	21,495,000
Appalachian									
West Virginia	7	7.22	329,735	3	7.38	1,004,000	17	2.44	4,431,000
Virginia	9	3.85	175,721	7	6.41	872,000	11	3.44	6,257,000
North Carolina	10	3.61	165,017	6	6.50	882,000	9	4.60	8,370,000
Kentucky	12	3.31	151,343	5	6.85	931,000	15	2.66	4,840,000
Total		17.99	821,816		27.14	3,689,000		13.14	23,898,000
Total All Regions		75.99	3,471,722		74.76	10,167,000		54.26	98,749,000

Total U.S. Hardwood Production (Annual Production 10 year average). . . . 4,567,987 M.B.M.
Total U.S. Hardwood Annual Capacity, 1934 . . . . . 13,593,000 M.B.M.
Total U.S. Hardwood Timber Stand, 1934 . . . . . 181,953,000 M.B.M.

* Statistical Position: - The rank of a state as compared with other states; thus in "production" and "stand" the state of Louisiana ranks first, having the greatest production and largest stand, but in capacity it ranks 9th.

a/ Source: Bureau of the Census, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934 and 1935 (See table IV).
b/ Source: Statistics of Mill Capacities, by Division of Research and Planning (See table XIV-A).
c/ Source: U.S. Forest Service "Commercial Forest Areas of the United States."

TABLE XVI

PERCENTAGE OF CAPACITY AND NUMBER OF MILLS

	Percentage of Total Capacity		Number of Saw Mills	
	Hardwood	Softwood	Hardwood	Softwood
Alabama	3.08	7.17	201	1,390
Arizona		0.67		16
Arkansas	7.30	3.55	470	678
California		5.50		145
Colorado		0.38		73
Connecticut	0.35	0.12	22	29
Delaware	0.04	0.07	6	19
Florida	1.06	3.47	28	80
Georgia	2.33	6.23	110	1,308
Idaho		3.39		139
Illinois	0.39		54	
Indiana	2.20		234	
Iowa	0.01		1	
Kansas	0.06		3	
Kentucky	6.84	0.11	568	31
Louisiana	5.60	3.40	111	283
Maine	2.10	0.70	76	103
Maryland	0.85	0.13	56	35
Massachusetts	1.08	0.36	38	53
Michigan	3.82	0.49	94	50
Minnesota		0.86		204
Mississippi	9.29	7.15	596	1,382
Missouri	3.87	0.44	342	201
Montana		1.80		87
Nebraska				
Nevada (See Calif. supra)				
New Hampshire	1.84	0.61	69	93
New Jersey	0.03	0.01	2	3
New Mexico		0.89		40
New York	1.16	0.39	56	76
North Carolina	6.50	5.01	432	978
North Dakota				
Ohio	2.29	0.01	270	3
Oklahoma	.89	0.61	98	84
Oregon		14.50		462
Pennsylvania	1.09	0.36	68	92
Rhode Island	.04	0.01	2	3
South Carolina	2.34	3.03	109	526
South Dakota		0.36		25
Tennessee	10.46	1.28	785	361
Texas	2.51	3.55	104	435
Utah		0.15		52
Vermont	.75	0.25	37	50
Virginia	6.41	4.28	530	908
Washington		17.69		374
West Virginia	7.50	0.00	381	1
Wisconsin	5.65	0.76	146	78
Wyoming		0.17		26
	99.73	99.91	6,099	11,361

Source: Statistics furnished by the Lumber Code Authority and compiled by the Division of Research and Planning, NRA.

TABLE XVII-A

LUMBER PRODUCTION : SOFTWOOD, BY STATES FOR EACH YEAR AND THE 10 YEAR AVERAGE;
1925 - 1934
(M Ft. B.M.)

	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	10 Year Average
Alabama	1,964,522	1,831,883	1,884,611	1,731,783	1,769,708	1,153,186	621,602	463,947	639,202	544,583	1,260,502
Arizona	145,609	115,230	169,085	158,047	174,594	95,497	85,085	58,162	90,092	73,180	116,658
Arkansas	976,419	836,617	732,009	659,149	822,166	569,684	348,190	205,563	335,764	416,858	590,442
California & Nevada	2,040,674	2,187,270	2,070,618	1,952,458	2,062,818	1,513,938	957,673	680,370	784,626	1,014,580	1,526,503
Colorado	71,001	74,954	67,250	72,200	71,343	54,564	48,345	39,085	33,698	49,370	58,181
Connecticut	10,407	11,896	19,170	9,878	9,918	7,238	7,110	2,442	3,623	5,796	8,748
Delaware	4,695	8,019	13,151	10,926	7,301	4,356	1,975	3,013	625	3,620	5,768
Florida	1,050,924	904,755	882,588	933,514	1,028,422	809,967	532,079	300,156	395,055	428,206	726,566
Georgia	1,238,181	1,026,389	1,034,435	888,437	1,189,839	632,564	400,363	242,573	420,450	417,610	748,976
Idaho	1,140,110	947,269	923,491	977,253	1,028,734	839,759	499,768	248,276	316,356	456,963	737,798
Illinois	1,425	2,487	800	484	619	538	7	100	158	250	687
Indiana	391	85	60	21	21	20	47	1	4	30	70
Iowa, Kansas & Nebraska	-	-	-	-	-	82	66	-	-	85	22
Kentucky	22,281	16,388	16,860	17,050	27,632	14,917	9,342	5,528	7,117	6,159	14,327
Louisiana	2,564,272	2,100,028	1,664,987	1,550,414	1,418,036	1,067,473	632,386	421,910	576,025	490,635	1,247,617
Maine	301,838	307,819	231,223	240,569	233,297	201,963	132,335	89,664	99,111	158,623	199,643
Maryland	37,227	29,346	31,585	29,533	31,524	23,311	14,236	9,668	7,220	9,436	22,311
Massachusetts	75,617	57,515	60,098	78,565	53,215	62,242	34,496	30,773	18,978	49,368	52,089
Michigan	231,765	172,888	138,079	141,787	122,079	107,712	67,420	30,254	42,763	56,316	111,706
Minnesota	512,787	431,627	371,366	359,618	305,788	153,079	63,520	41,083	37,888	67,908	234,466
Mississippi	2,597,365	2,362,634	2,093,547	2,085,097	2,174,193	1,127,173	674,008	423,081	615,803	664,692	1,481,759
Missouri	72,772	68,520	46,940	35,272	37,383	18,886	14,004	6,736	10,479	27,587	33,758
Montana	388,844	378,493	396,207	387,802	388,666	296,970	158,208	111,018	125,126	171,690	280,302
New Hampshire	215,370	210,025	190,670	211,190	165,066	156,283	74,221	48,051	89,946	135,464	149,629
New Jersey	4,242	2,310	258	102	687	134	100	100	230	1,030	919
New Mexico	152,325	127,110	172,517	162,030	148,287	142,885	58,787	71,714	89,498	101,409	122,656
New York	64,631	43,749	38,673	32,166	28,386	22,289	15,011	9,409	8,263	18,848	28,142
North Carolina	843,755	775,046	821,520	787,616	939,224	656,820	412,728	314,738	433,561	436,158	642,317
Ohio	490	282	10	120	797	292	96	69	303	387	284
Oklahoma	152,190	134,331	154,497	174,957	175,199	148,362	69,232	62,572	98,712	95,512	126,549
Oregon	4,209,596	4,447,673	3,985,032	4,361,904	4,772,194	3,635,438	2,617,463	1,594,794	2,234,922	2,360,714	3,421,973
Pennsylvania	126,926	120,759	89,269	84,185	92,369	52,784	40,744	30,884	24,783	39,095	70,180
Rhode Island	1,942	2,502	2,360	1,815	2,946	1,616	1,510	1,703	2,163	3,333	2,369
South Carolina	656,880	776,615	639,654	660,025	877,821	526,744	310,394	254,606	289,373	261,173	545,328
South Dakota	46,719	49,273	46,909	53,967	61,125	59,464	26,840	17,370	29,895	33,466	42,503
Tennessee	111,286	118,275	97,030	85,592	115,318	76,523	55,034	24,067	33,647	66,237	78,300
Texas	1,366,332	1,242,205	1,219,489	1,217,361	1,188,108	888,681	507,963	355,313	505,018	514,585	900,505
Utah	5,432	6,248	5,955	7,361	5,082	6,306	5,634	4,859	7,826	10,237	6,494
Vermont	62,071	59,290	48,504	53,527	60,098	47,116	27,877	22,676	16,689	26,367	42,421
Virginia	441,013	409,801	320,119	352,049	447,979	292,609	207,369	164,541	259,774	285,541	318,079
Washington	7,024,145	7,541,229	7,311,008	7,291,924	7,274,707	5,491,388	3,894,665	2,254,706	3,091,181	3,045,929	5,422,108
West Virginia	103,210	117,713	108,624	110,383	120,930	86,202	47,754	23,461	38,247	37,835	79,435
Wisconsin	456,768	394,464	330,381	352,548	354,098	258,608	159,555	55,759	73,737	123,456	255,937
Wyoming	16,105	19,392	12,863	24,396	25,628	25,131	16,519	20,821	10,942	18,837	19,063
Total	31,710,473	30,469,344	28,442,522	28,345,095	29,813,345	21,322,786	13,851,951	8,745,636	11,898,873	12,735,358	21,733,538

Source: Bureau of the Census, "Census of Manufactures," 1925-1934.

Note: 10 Year Average computed.

TABLE XVII-B

LUMBER PRODUCTION : HARDWOOD, BY STATES FOR EACH YEAR AND THE 10 YEAR AVERAGE
1925 - 1934
(M Ft. B.M.)

	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	10 Year Average
Alabama	271,216	273,239	287,076	248,299	289,256	188,438	110,418	80,061	117,449	114,569	196,002
Arizona	-	2	-	-	-	-	-	-	-	-	-
Arkansas	620,711	604,401	497,472	470,582	526,152	299,695	159,525	71,023	176,614	208,789	363,696
California & Nevada	2,317	689	193	201	411	325	67	150	-	167	452
Colorado	68	324	71	57	192	124	68	76	61	94	113
Connecticut	31,243	35,471	36,779	25,478	20,239	13,287	5,781	3,049	3,279	5,616	18,022
Delaware	2,629	1,414	3,673	2,235	2,340	4,078	1,554	948	844	1,595	2,131
Florida	12,952	15,830	24,540	61,558	108,475	66,082	44,547	20,252	44,113	45,137	44,348
Georgia	126,993	120,160	166,573	151,038	196,411	120,920	59,254	21,083	52,796	58,611	107,383
Idaho	465	202	495	215	57	650	131	102	115	126	255
Illinois	28,031	35,870	27,863	29,139	37,062	24,674	18,439	8,032	7,933	14,678	23,172
Indiana	178,169	139,387	148,412	126,769	169,949	97,817	52,776	26,852	42,329	64,523	104,698
Iowa, Kansas & Nebraska	16,069	14,002	16,982	13,908	20,332	13,267	10,453	3,433	3,930	5,522	11,789
Kentucky	184,997	200,171	180,758	157,290	311,534	174,538	102,012	45,810	39,519	116,817	151,342
Louisiana	728,819	789,502	720,737	728,008	814,324	549,245	316,846	145,116	259,984	284,011	533,659
Maine	28,271	33,074	32,595	25,954	24,613	20,141	19,495	12,329	5,793	19,874	22,213
Maryland	51,736	39,098	35,956	30,196	23,346	24,355	14,852	8,244	6,048	14,659	24,746
Massachusetts	34,028	28,653	28,200	33,714	18,648	19,869	8,311	7,929	4,808	7,735	19,186
Michigan	565,845	490,456	440,175	430,272	448,938	359,119	189,243	80,836	116,851	177,244	329,897
Minnesota	65,916	39,463	25,525	52,725	51,392	69,310	31,446	16,999	10,767	27,452	39,099
Mississippi	530,713	532,360	463,065	439,222	495,303	357,205	189,213	108,716	176,228	210,514	350,173
Missouri	114,017	110,048	143,196	106,718	190,695	107,849	60,912	28,516	30,792	72,959	96,570
Montana	10	205	60	77	45	20	5	30	-	151	60
New Hampshire	45,310	32,982	25,242	28,071	26,637	25,419	20,234	12,633	11,465	19,182	24,717
New Jersey	5,574	4,643	4,786	3,118	14,889	12,199	7,241	4,466	5,097	6,380	6,839
New Mexico	5	-	-	-	-	-	-	1	-	-	1
New York	133,023	127,214	103,832	97,940	131,205	87,328	59,041	29,438	27,451	39,828	83,630
North Carolina	196,980	195,919	233,702	233,277	263,163	158,015	88,074	68,114	79,638	133,294	165,016
Ohio	140,246	141,217	127,870	112,109	174,740	107,906	52,611	31,903	37,402	82,405	100,840
Oklahoma	5,460	15,598	15,446	18,836	24,545	15,115	7,746	2,044	5,924	15,474	12,618
Oregon	6,787	7,062	7,820	10,020	11,615	18,637	10,572	9,098	21,106	18,928	12,184
Pennsylvania	203,896	198,038	188,453	154,430	221,881	155,978	82,283	42,045	67,808	107,657	142,246
Rhode Island	1,744	2,924	4,455	2,807	3,568	3,403	1,440	1,189	776	982	2,328
South Carolina	123,409	144,210	177,362	161,875	190,166	180,671	139,973	99,307	132,367	79,868	142,922
South Dakota	60	8	-	-	1	-	-	-	-	1	7
Tennessee	531,073	565,048	498,267	444,714	648,510	337,414	208,418	104,326	135,283	233,161	370,621
Texas	211,676	213,916	226,971	229,395	263,532	156,581	47,851	49,931	88,845	79,694	156,852
Utah	429	231	197	262	219	183	160	54	182	123	204
Vermont	64,362	52,348	42,376	53,831	59,624	47,101	32,732	17,151	13,403	23,846	40,667
Virginia	268,167	266,862	215,497	195,657	260,473	202,880	104,001	62,244	60,796	120,633	175,721
Washington	3,180	5,010	14,854	13,353	27,356	10,741	13,132	5,983	14,914	18,341	12,686
West Virginia	480,143	471,075	433,246	437,440	512,062	319,881	199,237	111,822	146,366	186,066	329,735
Wisconsin	611,844	516,060	489,126	466,302	488,716	378,236	200,486	64,588	112,149	141,535	347,104
Wyoming	-	-	-	6	1	1	110	71	35	-	22
Total	6,628,163	6,466,586	6,089,698	5,797,028	7,072,687	4,728,687	2,670,692	1,405,596	2,062,261	2,758,281	4,567,987

Source: Bureau of the Census, "Census of Manufactures," 1925 - 1934.

Note: 10 Year Average computed.

TABLE XVIII

RECAPITULATION BY INTERVALS OF LUMBER PRODUCERS
WHOSE MILL CAPACITY IS KNOWN (*)

	Number of Producers	Total Hourly Capacity for Interval (In Bd. Ft.)
0 - 100	492	49,200
101 - 200	1,371	274,200
201 - 300	2,442	732,600
301 - 400	2,101	840,400
401 - 500	2,122	1,061,000
501 - 750	2,126	1,594,500
751 - 1,000	3,189	3,189,000
1,001 - 2,000	2,015	4,030,000
2,001 - 3,000	564	1,692,000
3,001 - 4,000	289	1,156,000
4,001 - 5,000	155	775,000
5,001 - 6,000	89	534,000
6,001 - 7,000	54	378,000
7,001 - 8,000	45	360,000
8,001 - 9,000	50	450,000
9,001 - 10,000	26	260,000
10,001 - 11,000	27	297,000
11,001 - 12,000	28	336,000
12,001 - 13,000	15	195,000
13,001 - 14,000	16	224,000
14,001 - 15,000	26	390,000
15,001 - 16,000	7	112,000
16,001 - 17,000	14	238,000
17,001 - 18,000	15	270,000
18,001 - 19,000	13	247,000
19,001 - 20,000	10	200,000
20,001 - 22,000	29	638,000
22,001 - 24,000	17	408,000
24,001 - 26,000	15	390,000
26,001 - 28,000	17	476,000
28,001 - 30,000	16	480,000
30,001 - 35,000	18	630,000
35,001 - 40,000	12	480,000
40,001 - 45,000	10	450,000
45,001 - 50,000	11	550,000
50,001 - 60,000	13	780,000
60,001 - 70,000	7	490,000
70,001 - Up	1	80,000
-Total	17,467	25,736,900

Source: Divisional Code Authorities

*Includes all codal divisions and subdivisions which saw lumber except Mahogany and Philippine Mahogany.

TABLE XIX

RECAPITULATION BY STATES OF
KNOWN LUMBER PRODUCERS*

	Total Number of Known Producers	Number of Producers Whose Mill Capacity is Unknown	Number of Producers Whose Mill Capacity is Known	Total Hourly Capacity (In Bd. Ft.)
Alabama	1,695	104	1,591	1,638,600
Alaska	6		6	27,800
Arizona	22	6	16	140,200
Arkansas	1,157	49	1,108	1,101,600
California	195	51	144	1,135,500
Colorado	102	29	73	79,100
Connecticut	67	16	51	42,300
Delaware	26	1	25	16,700
District of Columbia	2	1	1	3,000
Florida	537	4	533	770,500
Georgia	1,455	37	1,418	1,405,150
Idaho	207	68	139	700,400
Illinois	239	185	54	19,650
Indiana	400	166	234	111,300
Iowa	1		1	400
Kansas	3		3	3,300
Kentucky	601	2	599	367,000
Louisiana	394		394	986,100
Maine	231	52	179	250,900
Maryland	92	1	91	70,500
Massachusetts	120	29	91	129,450
Michigan	894	750	144	295,750
Minnesota	286	82	204	177,200
Mississippi	2,046	68	1,978	1,947,100
Missouri	551	8	543	287,400
Montana	131	44	87	372,700
Nevada	1		1	2,000
New Hampshire	201	39	162	219,300
New Jersey	6	1	5	3,700
New Mexico	52	12	40	184,650
New York	197	65	132	138,850
North Carolina	1,438	28	1,410	1,363,850
Ohio	570	297	273	117,250
Oklahoma	187	5	182	172,350
Oregon	517	55	462	2,998,100
Pennsylvania	271	111	160	129,850
Rhode Island	11	6	5	5,100
South Dakota	29	4	25	75,500
South Carolina	639	4	635	744,850
Tennessee	1,163	17	1,146	791,000
Texas	542	3	539	860,400
Utah	93	41	52	30,650
Vermont	116	29	87	89,150
Virginia	1,472	34	1,438	1,207,350
West Virginia	384	2	382	378,200
Washington	423	49	374	3,656,350
Wisconsin	972	748	224	452,850
Wyoming	37	11	26	36,000
	20,781	3,314	17,467	25,736,900

Source: Divisional Code Authorities.

*Includes all codal divisions and subdivisions which saw lumber except Mahogany and Philippine Mahogany.

TABLE XX

COMPARISON OF EQUIPMENT UTILIZATION

	Number of Producers	Total Capacity Per Hour (Bd.Ft.)	Reasonable Maximum Annual Capacity (M Ft.B.M.)	1929 Production (M Ft.B.M.)	1929 Production ÷ Annual Capacity Per Cent	1929 Production ÷ Hourly Capacity (In Hours)	1932 Production (M Ft.B.M.)	1932 Production ÷ Annual Capacity Per Cent	1932 Production ÷ Hourly Capacity (In Hours)	1933 Production (M Ft.B.M.)	1933 Production ÷ Annual Capacity Per Cent	1933 Production ÷ Hourly Capacity (In Hours)	1934 Production (M Ft.B.M.)	1934 Production ÷ Annual Capacity Per Cent	1934 Production ÷ Hourly Capacity (In Hours)
Washington	374	3,656,350	9,872,145	7,302,063	73.97	1,997	2,260,689	22.90	618	3,106,095	31.46	850	3,064,270	31.04	838
Oregon	462	2,998,100	8,094,870	4,784,009	59.10	1,596	1,603,892	19.81	535	2,256,028	27.87	752	2,379,642	29.40	794
Mississippi	1,978	1,947,100	5,257,170	2,669,496	50.78	1,371	531,397	10.11	273	792,031	15.07	407	875,206	16.65	449
Alabama	1,591	1,638,600	4,424,220	2,058,964	46.54	1,257	644,008	12.30	332	756,651	17.10	462	659,152	14.90	402
Georgia	1,418	1,405,150	3,793,905	1,386,250	36.54	987	263,656	6.95	188	473,946	12.47	337	476,221	12.55	339
North Carolina	1,410	1,363,850	3,682,395	1,202,377	32.65	882	382,852	10.40	281	513,199	13.94	376	571,452	15.52	419
Virginia	1,438	1,207,350	3,259,845	706,452	21.73	587	226,785	6.95	188	320,570	9.83	266	406,174	12.46	336
California & Nevada	145	1,137,500	3,071,250	2,063,229	67.18	1,814	680,520	22.16	598	784,626	25.55	690	1,014,747	33.04	892
Arkansas	1,108	1,101,600	2,974,320	1,348,318	45.33	1,224	276,586	9.30	251	514,378	17.29	467	627,647	21.10	570
Louisiana	394	986,100	2,662,470	2,232,360	83.85	2,264	567,026	21.30	575	836,009	31.40	848	774,646	29.10	786
Texas	539	860,400	2,323,080	1,451,640	62.49	1,687	405,244	17.44	471	593,863	25.56	690	594,479	25.59	691
Tennessee	1,146	791,000	2,135,700	763,828	35.76	966	128,393	6.01	162	168,930	7.91	214	299,398	14.02	379
Florida	533	770,500	2,080,350	1,136,897	54.65	1,476	320,408	15.40	416	439,168	21.11	570	473,343	22.75	614
South Caroline	635	744,850	2,011,095	1,067,987	53.10	1,434	353,913	17.60	475	421,740	20.97	566	341,061	16.96	458
Idaho	139	700,400	1,891,080	1,028,791	54.40	1,468	348,378	18.43	355	316,971	16.73	452	457,089	24.17	653
Wisconsin	284	452,850	1,222,695	842,814	68.93	1,861	120,347	9.84	266	185,886	15.20	410	264,991	21.67	585
West Virginia	382	378,200	1,021,140	632,992	61.99	1,674	135,283	13.25	358	184,613	18.08	488	223,921	21.93	592
Montana	87	372,700	1,006,290	388,711	38.63	1,043	111,048	11.04	298	125,126	12.43	336	171,841	17.08	461
Kentucky	599	367,000	990,900	339,146	34.23	924	51,338	5.18	140	46,616	4.71	127	125,776	12.39	335
Michigan	144	295,750	798,525	571,017	71.51	1,931	111,090	13.91	376	159,614	19.99	540	235,560	29.50	796
Missouri	543	287,400	775,980	226,078	29.39	794	35,252	4.54	123	41,271	5.32	144	100,546	12.96	350
Maine	179	250,900	677,430	257,910	38.07	1,028	101,993	15.06	407	104,904	15.49	418	178,497	26.35	711
New Hampshire	162	219,300	592,110	191,703	32.38	874	60,684	10.25	277	101,411	17.13	462	154,648	26.12	705
New Mexico	40	184,650	498,555	148,287	29.74	803	71,715	14.38	388	89,498	17.95	485	101,409	20.34	549
Minnesota	204	177,200	478,440	357,180	74.66	2,016	58,082	12.14	328	46,655	10.17	275	95,360	19.93	538
Oklahoma	182	172,350	465,345	199,744	42.92	1,159	64,616	13.89	375	104,636	22.49	607	110,986	23.85	644
Arizona	16	140,200	378,540	174,594	46.12	1,245	58,162	15.36	415	90,092	23.80	643	73,180	19.33	522
New York	132	138,850	374,895	159,591	42.57	1,149	38,847	10.36	280	35,714	9.53	257	58,676	15.65	423
Pennsylvania	160	129,850	350,595	314,250	89.63	2,420	72,929	20.80	562	98,591	28.41	713	146,752	41.86	1,130
Massachusetts	91	129,450	349,515	71,863	20.56	555	38,702	11.07	299	23,787	6.81	184	57,103	16.34	441
Ohio	273	117,250	316,575	175,537	55.45	1,497	31,972	10.10	273	37,705	11.91	322	82,792	26.15	706
Indiana	234	111,300	300,510	169,970	56.56	1,527	26,853	8.94	241	42,333	14.09	380	64,553	21.48	580
Vermont	87	89,150	240,705	119,682	49.70	1,342	39,827	16.55	447	30,099	12.50	338	50,213	20.86	563
Colorado	73	79,100	213,570	71,535	33.49	904	39,163	18.34	495	33,759	15.81	427	49,164	23.16	625
South Dakota	26	75,500	203,850	61,126	29.99	810	17,370	8.52	230	29,895	14.67	396	33,467	16.42	443
Maryland	91	70,500	190,350	54,870	28.83	778	17,932	9.42	254	12,268	6.44	174	24,095	12.66	342
Connecticut	51	42,300	114,210	30,157	26.40	713	5,491	4.81	130	6,902	6.04	163	11,112	9.99	270
Wyoming	26	36,000	97,200	25,629	26.37	712	20,892	21.49	580	10,977	11.29	305	18,837	19.38	523
Utah	52	30,650	82,755	5,301	6.41	173	4,913	5.94	160	8,008	9.68	261	10,360	12.52	338
Illinois	54	19,650	53,055	37,681	71.02	1,918	8,132	15.33	414	8,091	15.25	412	14,928	28.14	760
Delaware	25	16,700	45,090	9,641	21.38	577	3,961	8.78	237	1,469	3.26	88	5,415	12.01	324
Rhode Island	5	5,100	13,770	6,514	47.31	1,277	2,892	21.00	567	2,939	21.34	576	4,315	31.34	846
New Jersey	5	3,700	9,990	15,576	155.92	4,210	4,566	46.71	1,234	5,327	53.32	1,440	7,410	74.17	2,003
Iowa, Kansas & Nebraska	4	3,700	9,990	20,332	203.52	5,495	3,433	34.36	928	3,930	39.34	1,062	5,607	56.13	1,515
	17,460	25,706,100	69,406,470	36,886,032	53.14	1,435	10,151,232	14.63	395	13,961,134	20.12	543	15,493,639	22.32	603
Alaska	6	27,800	75,060												
District of Columbia	1	3,000	8,100												
	17,467	25,736,900	69,489,630												

Source: Production from Census. Capacity (Hourly) from Capacity Study. All other figures computed.

TABLE XXI

TABLE OF CAPACITY AND RATIO OF STAND TO CAPACITY
(Million Ft. B. M.)

	Capacity 1/		Ratio Stand to Capacity 2/	
	Hardwood	Softwood	Hardwood	Softwood
Alabama	419	4,005	10.45	4.19
Arizona		379		52.31
Arkansas	992	1,983	12.93	5.72
California		3,066		92.12
Colorado		214		221.39
Connecticut	48	66	13.56	1.19
Delaware	6	39	11.83	.92
Florida	145	1,936	14.78	6.81
Georgia	318	3,476	19.03	4.26
Idaho		1,891		51.07
Illinois	53		58.81	
Indiana	301		7.19	
Iowa	1		11.07	
Kansas	9			
Kentucky	931	60	5.20	12.23
Louisiana	763	1,900	20.58	6.78
Maine	286	391	52.51	63.95
Maryland	116	74	9.22	2.77
Massachusetts	148	202	3.84	7.29
Michigan	520	279	24.96	12.37
Minnesota		478		7.18
Mississippi	1,264	3,993	5.95	3.24
Missouri	527	249	6.45	1.16
Montana		1,006		49.50
Nebraska				
Nevada (See Calif. supra)				
New Hampshire	251	342	10.19	12.86
New Jersey	4	6	133.50	55.33
New Mexico		499		28.84
New York	159	216	72.20	30.25
North Carolina	882	2,800	9.49	3.95
North Dakota				
Ohio	311	5	13.32	10.20
Oklahoma	120	346	9.03	7.11
Oregon		8,095		54.08
Pennsylvania	148	202	32.10	5.67
Rhode Island	6	6	10.33	4.83
South Carolina	319	1,692	28.84	5.53
South Dakota		204		15.73
Tennessee	1,422	714	5.99	1.63
Texas	342	1,981	12.88	5.94
Utah		83		93.86
Vermont	102	139	60.83	15.12
Virginia	872	2,388	7.18	2.02
Washington		9,872	*	32.50
West Virginia	1,004	17	4.41	37.12
Wisconsin	756	427	11.26	5.41
Wyoming		97		335.91

Source: U. S. Forest Service Release.

* Total Hardwood and Softwood Stand divided by Softwood Capacity.

1/ From Statistics furnished by the Lumber Code Authority and compiled by the Division of Research and Planning of the NRA.

2/ Stand of Saw Timber in the United States.

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TABLE XXII

QUARTERLY SOFTWOOD STOCK BY DIVISIONS 1929 - 1934

	Southern Pine	West Coast	Western Pine	California Redwood	North-eastern Softwoods	Northern Hemlock	Appalachian Softwoods	Southern Cypress	Northern Pine	Total
1929										
1 quarter	2,833,000	1,586,000	1,822,000	458,950		366,300	101,000			
2 "	2,782,000	1,490,000	1,958,000	448,850		369,700	101,000			
3 "	2,896,000	1,706,000	2,124,000	442,500		379,000	107,000			
4 "	3,064,000	1,850,000	2,515,000	469,750	328,000	403,000	112,000	357,000	334,000	9,432,750
1930										
1 quarter	3,208,000	1,843,000	2,333,000	483,000		442,700	118,000			
2 "	3,370,000	1,955,000	2,638,000	484,850		469,100	124,000			
3 "	3,419,000	1,718,000	2,854,000	481,300		500,400	123,000			
4 "	3,458,000	1,869,000	2,559,000	491,850	293,000	494,000	132,000	375,000	290,000	9,961,850
1931										
1 quarter	3,356,000	1,665,000	2,314,000	486,500		511,400	126,000			
2 "	3,223,000	1,693,000	2,359,000	464,500		539,300	123,000			
3 "	2,960,000	1,634,000	2,380,000	452,000		554,100	117,000			
4 "	2,890,000	1,601,000	2,216,000	445,000	314,000	541,000	92,000	370,000	249,000	8,718,000
1932										
1 quarter	2,716,000	1,496,000	1,807,000	434,500		550,700	86,000			
2 "	2,651,000	1,343,000	1,724,000	416,000		512,600	84,000			
3 "	2,363,000	1,235,000	1,668,000	408,750		465,000	78,000			
4 "	2,251,000	1,198,000	1,599,000	398,000	270,000	432,000	73,000	357,000	197,000	6,775,000
1933										
1 quarter	2,201,000	1,127,000	1,387,000	390,000		423,800	64,000			
2 "	1,913,000	1,077,000	1,212,000	348,000		356,900	52,000			
3 "	1,911,000	1,084,000	1,322,000	300,000		271,000	49,000			
4 "	2,002,000	1,168,000	1,336,000	285,000	200,000	185,000	52,000	334,000	126,000	5,688,000
1934										
										5,889,370
1 quarter	2,136,000	1,373,000	1,236,000	285,500	187,000	198,998	49,872	319,000	112,000	6,191,568
2 "	2,160,000	1,505,000	1,383,000	301,000	179,000	202,476	42,486	296,606	122,000	6,098,501
3 "	2,111,000	1,443,000	1,451,000	297,000	164,000	192,803	38,086	277,612	123,000	5,728,688
4 "	2,000,000	1,358,000	1,345,000	300,000	149,961	178,657	39,882	252,188	105,000	

Source: L. C. A. Docket #5 - 2nd Quarter 1935.

TABLE XXIII

QUARTERLY HARDWOOD STOCK BY ~~DIVISIONS~~ Regions
1929 - 1934

	Appalachian and Southern Hardwoods M Ft. B.M.	Northern Hardwoods M Ft. B.M.	North-eastern Hardwoods M Ft. B.M.	North Central M Ft. B.M.	Walnut M Ft. B. M.	Total M Ft. B.M.
1929						
1st Quarter	2,189,000	532,600			19,000	
2nd "	2,203,000	577,800			20,800	
3rd "	2,374,000	540,500			24,700	
4th "	2,457,000	526,000	300,000	156,000	30,000	3,469,000
1930						
1st Quarter	2,574,000	670,000			31,900	
2nd "	2,700,000	749,600			33,400	
3rd "	2,673,000	742,300			31,900	
4th "	2,713,000	713,000	262,000	129,000	30,300	3,847,300
1931						
1st Quarter	2,621,000	801,100			26,900	
2nd "	2,557,000	833,900			26,100	
3rd "	2,420,000	771,500			23,100	
4th "	2,354,000	692,000	241,000	115,000	22,300	3,424,300
1932						
1st Quarter	2,203,000	676,100			21,100	
2nd "	2,159,000	624,600			20,200	
3rd "	1,992,000	534,100			18,800	
4th "	1,827,000	422,000	165,000	89,000	17,000	2,520,000
1933						
1st Quarter	1,700,000	416,700			15,900	
2nd "	1,413,000	345,400			13,400	
3rd "	1,433,000	295,700			11,800	
4th "	1,534,000	313,000	125,000	70,000	15,500	2,057,500
1934						
1st Quarter	1,566,000	356,006	120,200	70,000	15,700	2,127,906
2nd "	1,604,000	363,643	125,479	72,500	17,048	2,182,670
3rd "	1,628,000	340,789	109,242	71,400	17,583	2,167,014
4th "	1,572,000	322,122	94,033	68,800	17,716	2,074,671

Source: Lumber Code Authority Docket #5, 2nd Quarter, 1935.

TABLE XXIV

QUARTERLY SOFTWOOD PRODUCTIONS BY ~~DIVISIONS~~ REGIONS 1929 - 1934

(M Ft. B. M.)

	Southern Pine	West Coast	Western Pine	California Redwood	North-eastern Softwoods	Northern Hemlock	Appalachian Softwoods	Southern Cypress	Northern Pine	Total
1929 Total	11,630,000	10,147,000	5,217,000	589,925	646,000	486,000	375,000	381,000	357,000	29,828,925
1 quarter	3,023,000	2,293,000	854,000	135,675	161,500	122,000	91,000	95,250	89,250	6,864,675
2 "	3,027,000	2,818,000	1,582,000	153,500	161,500	122,500	88,000	95,250	89,250	8,137,000
3 "	2,928,000	2,730,000	1,554,000	142,750	161,500	144,300	103,000	95,250	89,250	7,948,050
4 "	2,652,000	2,306,000	1,227,000	158,000	161,500	97,200	93,000	95,250	89,250	6,879,200
1930 Total	7,450,000	7,638,000	4,076,000	489,150	554,000	380,000	301,000	379,000	222,000	21,489,150
1 quarter	2,104,000	2,098,000	687,000	145,300	138,500	109,100	95,000	94,750	55,500	5,527,150
2 "	2,051,000	2,341,000	1,417,000	128,800	138,500	111,700	86,000	94,750	55,500	6,424,250
3 "	1,745,000	1,570,000	1,257,000	107,450	138,500	102,600	64,000	94,750	55,500	5,134,800
4 "	1,550,000	1,629,000	715,000	107,600	138,500	56,600	56,000	94,750	55,500	4,402,950
1931 Total	4,430,000	5,367,000	2,757,000	281,300	333,000	261,000	211,000	255,000	95,000	13,990,300
1 quarter	1,287,000	1,293,000	505,000	94,800	83,250	60,600	62,000	63,750	23,750	3,473,150
2 "	1,246,000	1,668,000	959,000	70,500	83,250	90,000	61,000	63,750	23,750	4,265,250
3 "	1,008,000	1,401,000	876,000	58,800	83,250	76,200	45,000	63,750	23,750	3,635,750
4 "	889,000	1,005,000	417,000	57,200	83,250	34,200	43,000	63,750	23,750	2,616,150
1932 Total	3,068,000	3,090,000	1,817,000	174,250	236,000	114,000	130,000	118,000	58,000	8,805,250
1 quarter	703,000	831,000	228,000	49,150	59,000	52,700	38,000	29,500	14,500	2,004,850
2 "	828,000	765,000	551,000	42,600	59,000	19,200	40,000	29,500	14,500	2,348,800
3 "	752,000	729,000	622,000	37,625	59,000	14,400	27,000	29,500	14,500	2,285,025
4 "	785,000	765,000	416,000	44,875	59,000	27,700	25,000	29,500	14,500	2,166,575
1933 Total	4,200,000	4,653,000	2,338,000	203,900	264,000	117,000	142,000	115,000	49,000	12,081,900
1 quarter	645,000	862,000	194,000	46,100	66,000	24,600	19,000	28,750	12,250	1,897,700
2 "	848,000	1,190,000	646,000	32,900	66,000	30,300	33,000	28,750	12,250	2,887,200
3 "	1,400,000	1,473,000	913,000	53,600	66,000	28,400	51,000	28,750	12,250	4,026,000
4 "	1,307,000	1,128,000	585,000	71,300	66,000	33,700	39,000	28,750	12,250	3,271,000
1934 Total	4,680,000	4,275,000	2,649,000	350,450	290,882	181,578	56,671	110,310	84,433	12,678,324
1 quarter	1,450,000	1,208,000	375,000	80,900	78,900	50,826	14,551	24,461	10,733	3,293,371
2 "	1,375,000	1,046,000	908,000	93,700	87,972	53,842	18,717	24,974	37,000	3,641,205
3 "	1,009,000	1,024,000	850,000	86,600	75,503	48,419	9,399	30,582	30,000	3,163,503
4 "	846,000	997,000	516,000	89,250	52,507	28,491	14,004	30,293	6,700	2,580,245
Total	35,458,000	35,170,000	18,854,000	2,088,975	2,323,882	1,539,578	1,215,671	1,358,310	865,433	98,873,849
6 Year Average	5,909,666	5,861,666	3,142,333	348,163	390,647	256,596	202,612	226,385	144,239	16,478,975

Source: L. C. A. Docket #5 - 2nd Quarter 1935.

TABLE XXV

QUARTERLY HARDWOOD PRODUCTION BY DIVISIONS REGIONS
1929 - 1934

	Appalachian and Southern Hardwoods M Ft. B.M.	Northern Hardwoods M Ft. B.M.	North-eastern Hardwoods M Ft. B.M.	North Central M Ft. B.M.	Walnut M Ft. B.M.	Total
1929	5,315,000	939,000	521,000	381,250	71,500	7,227,750
1st Quarter	1,286,000	313,600	130,250	95,250	13,200	1,838,300
2nd "	1,251,000	277,900	130,250	95,250	19,200	1,773,600
3rd "	1,457,000	196,300	130,250	95,250	19,700	1,898,500
4th "	1,321,000	151,200	130,250	95,500	19,400	1,717,350
1930	3,792,000	794,000	385,000	230,000	36,300	5,237,300
1st Quarter	1,189,000	335,500	96,250	57,500	11,900	1,690,150
2nd "	1,086,000	258,400	96,250	57,500	11,100	1,509,250
3rd "	810,000	121,600	96,250	57,500	6,300	1,091,650
4th "	707,000	79,500	96,250	57,500	7,000	946,250
1931	2,245,000	464,000	237,000	148,000	23,200	3,117,200
1st Quarter	664,000	205,500	59,250	37,000	4,500	970,250
2nd "	646,000	144,800	59,250	37,000	7,100	894,150
3rd "	476,000	62,200	59,250	37,000	5,000	639,450
4th "	459,000	51,500	59,250	37,000	6,600	613,350
1932	1,395,000	230,000	130,000	84,000	9,200	1,848,200
1st Quarter	408,000	134,100	32,500	21,000	2,700	598,300
2nd "	425,000	52,000	32,500	21,000	2,800	533,300
3rd "	289,000	19,500	32,500	21,000	1,600	363,600
4th "	273,000	24,400	32,500	21,000	2,100	353,000
1933	2,090,000	240,000	140,000	109,800	22,000	2,601,800
1st Quarter	279,000	46,000	35,000	27,600	2,900	390,500
2nd "	488,000	36,500	35,000	27,600	3,500	590,600
3rd "	749,000	71,800	35,000	27,000	6,300	889,100
4th "	574,000	85,700	35,000	27,600	9,300	731,600
1934	1,950,000	281,075	144,676	150,752	16,962	2,543,465
1st Quarter	566,000	112,420	56,000	48,352	4,855	787,627
2nd "	603,000	80,326	54,223	46,500	4,624	788,673
3rd "	458,000	46,076	18,160	31,600	4,154	557,990
4th "	323,000	42,253	16,293	24,300	3,329	409,175

Source: Lumber Code Authority Docket #5, 2nd Quarter, 1935.

Table XXVI

Quarterly Shipments of Softwood Lumber By ~~Divisions~~ REGIONS
1929 - 1935

(Million feet B.M.)

	Total Shipments	Southern Pine		West Coast		Western Pine		Redwood		Northern Hemlock		Northeastern		All Other	
		Estimated Shipments	Per Cent of Softwood	Estimated Shipments	Per Cent of Softwood	Estimated Shipments	Per Cent of Softwood	Estimated Shipments	Per Cent of Softwood	Estimated Shipments	Per Cent of Softwood	Estimated Shipments	Per Cent of Softwood	Estimated Shipments	Per Cent of Softwood
1929															
1st quarter	7,106.9	2,957	41.6	2,374	33.4	1,174	16.5	131.8	1.8	90.7	1.3	133.4	1.9	246.	3.5
2nd quarter	8,121.3	3,078	37.9	2,914	35.9	1,407	17.3	163.6	2.0	119.1	1.5	158.7	1.9	280.9	3.5
3rd quarter	7,449.9	2,814	37.8	2,514	33.8	1,478	18.5	149.1	2.0	135.	1.8	177.8	2.3	282.	3.8
4th quarter	6,245.2	2,484	39.7	2,162	34.7	1,014	16.2	130.8	2.1	73.2	1.2	165.1	2.6	219.1	3.5
1930															
1st quarter	5,586.3	1,960	35.1	2,101	37.6	949	17.0	132.	2.4	65.4	1.2	153.1	2.7	221.8	4.0
2nd quarter	5,790.5	1,889	32.7	2,229	38.5	1,074	18.5	127.	2.2	85.3	1.5	147.3	2.5	238.9	4.1
3rd quarter	5,092.2	1,696	33.3	1,807	35.5	1,031	20.2	111.	2.2	71.3	1.4	164.9	3.2	211.	4.2
4th quarter	4,333.0	1,511	34.9	1,478	34.1	866	20.0	97.	2.2	63.0	1.5	123.7	2.8	194.3	4.5
1931															
1st quarter	4,066.5	1,389	34.2	1,495	36.7	758	18.6	100.7	2.5	43.2	1.1	101.4	2.5	179.2	4.4
2nd quarter	4,300.3	1,378	32.1	1,640	38.1	878	20.4	93.4	2.2	62.1	1.4	82.7	1.9	166.1	3.9
3rd quarter	3,921.3	1,271	32.4	1,460	37.3	847	21.6	72.4	1.8	61.4	1.6	68.6	1.7	140.9	3.6
4th quarter	2,878.5	960	33.5	1,038	36.0	587	20.4	64.4	2.2	47.3	1.6	59.2	2.1	122.6	4.2
1932															
1st quarter	2,700.8	877	32.4	959	35.5	618	22.9	59.4	2.2	43.	1.6	58.8	2.2	85.6	3.2
2nd quarter	2,719.8	893	32.8	918	33.8	631	23.2	60.8	2.2	57.3	2.1	70.	2.6	89.7	3.3
3rd quarter	2,848.1	1,040	36.5	837	29.4	693	24.3	44.8	1.6	62.	2.2	78.4	2.7	92.9	3.3
4th quarter	2,516.5	898	35.7	802	31.9	542	21.5	55.4	2.2	60.7	2.4	72.8	2.9	85.6	3.4
1933															
1st quarter	2,253.4	732	32.4	871	38.5	426	19.1	54.1	2.4	32.8	1.5	70.2	3.1	67.3	3.0
2nd quarter	3,500.7	1,186	33.8	1,154	32.9	793	23.7	75.	2.2	97.2	2.8	83.5	2.4	111.	3.1
3rd quarter	4,079.0	1,484	36.3	1,360	33.4	817	20.0	101.6	2.6	114.3	2.7	93.5	2.3	108.6	2.7
4th quarter	3,209.9	1,292	40.2	963	30.0	564	17.6	86.3	2.7	119.7	3.7	86.8	2.7	97.1	3.0
1934															
1st quarter	2,883.2	1,087	37.7	1,004	34.8	509	17.7	77.4	2.7	36.4	1.2	91.5	3.2	77.6	2.7
2nd quarter	3,283.9	1,271	38.7	903	27.6	784	23.9	85.	2.6	49.	1.5	91.9	2.7	99.3	3.0
3rd quarter	3,372.9	1,161	34.5	1,085	32.2	801	23.8	90.7	2.7	58.1	1.7	90.	2.6	86.3	2.5
4th quarter	3,060.9	1,163	38.0	1,006	32.9	620	20.3	84.1	2.7	42.6	1.4	67.2	2.2	76.8	2.5
1935															
1st quarter	3,198.8	1,220	38.1	1,135	35.5	608	19.0	81.6	2.5	34.9	1.1	40.7	1.3	81.6	2.5

Source: Lumber Code Authority Docket Number 5; 2nd quarter, 1935.

Table XXVII

Quarterly Shipments of Hardwood Lumber By ~~Divisions~~ Regions
1929 - 1935

(Million f.et B.M.)

	Total Shipments	Southern & Appalachian		Northern		North Central		Northeastern		Walnut		All Other	
		Estimated Shipments	Per Cent of Hardwood	Estimated Shipments	Per Cent of Hardwood	Estimated Shipments	Per Cent of Hardwood	Estimated Shipments	Per Cent of Hardwood	Estimated Shipments	Per Cent of Hardwood	Estimated Shipments	Per Cent of Hardwood
1929													
1st quarter	1,889.1	1,356	71.8	284.	15.1	91.6	4.8	129.6	6.9	15.9	.8	12.	.6
2nd quarter	1,849.9	1,377	74.5	232.7	12.6	100.4	5.4	110.4	6.0	17.4	.9	12.	.6
3rd quarter	1,747.2	1,289	73.8	233.6	13.4	91.2	5.2	105.6	6.0	15.8	.9	12.	.7
4th quarter	1,540.	1,132	73.6	165.7	10.9	81.8	5.3	134.4	8.7	14.1	.8	12.	.7
1930													
1st quarter	1,476.6	1,080	73.1	191.5	13.0	71.9	4.9	114.2	7.7	10.	.7	9.	.6
2nd quarter	1,306.8	942	72.1	178.8	13.7	69.1	5.3	97.3	7.4	9.6	.7	10.	.8
3rd quarter	1,079.4	784	72.7	128.9	12.0	56.6	5.2	93.1	8.6	7.8	.7	9.	.8
4th quarter	1,032.5	731	70.8	108.8	10.5	57.4	5.6	118.4	11.5	7.9	.8	9.	.8
1931													
1st quarter	1,042.2	796	76.4	117.4	11.3	41.	3.9	72.2	6.9	8.6	.8	7.	.7
2nd quarter	1,030.2	795	77.1	112.	10.9	37.6	3.6	69.7	6.8	7.9	.8	8.	.8
3rd quarter	887.0	639	72.1	124.6	14.0	48.1	5.4	59.3	6.7	8.	.9	8.	.9
4th quarter	808.5	571	70.6	131.	16.2	35.3	4.4	56.8	7.0	7.4	.9	7.	.9
1932													
1st quarter	879.2	636	72.3	150.	17.1	29.7	3.4	55.6	6.3	3.9	.4	4.	.5
2nd quarter	682.6	495	72.4	103.5	15.2	28.	4.1	47.4	6.9	3.7	.5	5.	.7
3rd quarter	733.0	547	74.6	110.	15.0	22.7	3.1	45.3	6.2	3.	.4	5.	.7
4th quarter	691.7	460	66.5	136.5	19.7	29.6	4.5	57.7	8.3	3.9	.6	4.	.6
1933													
1st quarter	541.8	408	75.3	51.3	9.5	21.3	3.9	48.6	9.0	3.6	.7	9.	1.6
2nd quarter	1,066.1	869	81.5	107.8	10.1	31.9	3.0	41.4	3.9	6.	.6	10.	.9
3rd quarter	964.4	744	77.2	121.5	12.6	42.4	4.4	39.6	4.1	7.9	.8	9.	.9
4th quarter	687.2	519	75.6	68.4	9.9	33.7	4.9	50.4	7.3	6.7	1.0	9.	1.3
1934													
1st quarter	717.8	532.9	74.2	68.2	9.5	41.3	5.8	60.8	8.5	4.6	.6	10.	1.4
2nd quarter	744.4	565.3	75.9	73.4	9.9	43.9	5.9	48.9	6.6	3.1	.4	10.	1.3
3rd quarter	584.7	434.2	74.2	68.9	11.8	32.7	5.6	34.4	5.9	4.5	.8	10.	1.7
4th quarter	511.6	378.5	74.0	60.9	11.9	26.7	5.2	31.5	6.2	4.	.8	10.	1.9
1935													
1st quarter	684.4	520.4	76.0	89.9	13.1	32.9	4.9	26.9	3.9	4.3	.6	10.	1.5

Source: Lumber Code Authority Docket Number 5, 2nd quarter, 1935.

Table XXVIII

Costs of Producing Southern Pine

Period	Source of Data	Logging	Milling	Manufacturing (Sub-total)	General and Adminis.	Depreciation	Shipping and Selling	Conversion (Sub-total)	Stumpage	Total Costs
First quarter 1934	Industry questionnaires	$6.88	$6.83	$13.71	$4.55 3/		$2.68	$20.94	$4.31	$25.25
Year										
1929	U.S. Tariff Commission 1/	7.14 1/	7.63	14.77 1/	5.41 1/	.00 2/		20.18	5.23	25.41
1930	Southern Pine Ass'n	6.30	5.69	11.99	3.48	1.61	2.26	19.34	5.68	25.02
1929	Southern Pine Ass'n	6.75	6.10	12.85	3.14	1.62	2.13	19.74	6.06	25.80
1928	Southern Pine Ass'n	6.66	6.06	12.72	3.11	1.60	2.05	19.48	5.46	24.94
1927	Southern Pine Ass'n	7.37	6.37	13.74	3.08	1.55	2.06	20.43	5.52	25.95
1926	Southern Pine Ass'n	7.29	6.58	13.87	3.01	1.57	2.00	20.45	5.63	26.10
1925	Southern Pine Ass'n	6.59	6.31	12.90	2.77	1.55	1.92	19.14	5.54	24.68
1924	Southern Pine Ass'n	6.85	6.31	13.16	2.69	1.47	1.89	19.21	5.87	25.08
1923	Southern Pine Ass'n	6.56	6.04	12.60	2.61	1.35	1.84	18.40	5.63	24.03
1922	Southern Pine Ass'n	5.58	5.18	10.76	2.50	1.27	1.68	16.21	5.34	21.55
1921	Southern Pine Ass'n	6.08	5.29	11.37	2.73	1.30	1.71	17.11	5.33	22.44

1/ The U.S. Tariff Commission included depreciation in these items.
2/ The U.S. Tariff Commission did not consider selling expenses.
3/ The Industry Cost sheets were so arranged as to classify depreciation with the operation expense - separate tabulation, however, developed this item to amount to $1.42 in this period.

Sources: Indicated opposite each series.
Compiled by: D. N. Burnham, C.P.A.
Division of Review, NRA.

Table XXIX

Western Pine Costs

	First Quarter 1934 1/	Year 1934 2/	Year 1932 2/	Year 1929 4/	Year 1929 3/	Year 1927 4/	Year 1926 4/
Logging	$ 6.93	$ 7.53	$ 7.53	$ 9.17	$9.73	$10.28	$10.02
Sawmill and yard	4.77	4,54			4.40		
Pond to trimmer			1.77	2.27		2.41	2.41
Chain to pile inclusive			1.54	1.40		1.78	1.63
Overhead	4.70	4.35	2.44	1.53	3.46	1.91	1.77
Depreciation (Sawmill, etc.)		.82	.86	.55	0	56	53
Cost in pile -	16.40	17.24	14.14	14.92	17.59	16.94	16.37
Pile to planer inclusive	1.27	1.67	1.40	2.03	3.01	1.97	1.67
Shipping expense	1.54	1.56	1.20	1.23		1.40	1.45
Depreciation (Planing mill, etc.)		.27	.36	.25		.32	.29
Selling expense	2.12	2.64	1.55	1.39	5/	1.32	1.19
Cost in car -	21.33	23.38	18.65	19.82	20.60	21.94	20.96
Stumpage (Lumber tally basis)	2.11	2.86	2.89	2.17	2.47	2.42	2.46
Operating costs and stumpage	23.44	26.24	21.54	21.99	23.07	24.36	23.42
Other costs	.00	.00	.30	.77	.00	.87	1.05
Total - All costs	23.44	26.24	21.84	22.76	23.07 5/	25.23	24.47

1/ Industry questionnaires.
2/ Western Pine association.
3/ U.S. Tariff Commission.
4/ Western Pine Manufacturer's Association.
5/ Without selling and interest.

Sources: Indicated by column references
Compiled by: D. N. Burnham, C.P.A.
Division of Review, NRA.

TABLE XXX

LUMBER: Costs and Realization.

BASIS: Thousand Feet Board Measure

	Industry Data Under Code Jany-Feby-Mch. 1934		United States Tariff Commission
	Reported Costs	Reported Realization	Costs 1929
Southern Pine:			
Large Mills	$ 24.53	$ 26.63	$ (1)
Small Mills	20.42	22.24	(1)
All Mills	24.04	26.07	28.25
Southern Hardwood:	28.58	32.33	(1)
Appalachian Hardwood	32.68	35.42	(1)
Western Pine (Ponderosa)	24.08	23.18	23.07
West Coast:			22.96
Douglas Fir and Hemlock -			
Large Mills	18.51	17.91	(1)
Small Mills	12.31	14.66	(1)
Sitka Spruce	22.83	22.19	(1)

(1) Not separately tabulated by United States Tariff Commission.

Compiled By: D. N. Burnham, C.P.A.
Review Division, N.R.A.
Sources: Industry Data from Industry Questionnaires
Tariff Commission Data from Report to the President on Lumber Report No.32, Second Series. Page 22.

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TABLE XXXI

CONSUMPTION OF DOMESTIC LUMBER BY THE CONSTRUCTION, WOODEN CONTAINER AND ALL OTHER INDUSTRIAL USERS FOR THE YEAR 1928
(M Ft.B.M.)

	Construction[1]			Wooden Container[2]			Lumber Industrially Consumed By Other Than Construction Products[2]			Total[3]		
	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total
Alabama	131,106	13,256	144,362	34,693	15,753	50,446	33,434	16,822	50,256	199,233	46,831	245,064
Arizona	65,817	5,644	61,461	30,009		30,009	1,276	40	1,316	87,102	5,684	92,786
Arkansas	36,779	3,719	40,498	17,864	35,220	53,084	16,493	51,569	68,062	71,136	90,508	161,644
California	1,340,271	135,516	1,475,787	67,746	120,095	187,841	107,767	25,072	132,839	1,515,784	280,683	1,796,467
Colorado	119,640	12,097	131,737	11,032	2	11,034	37,225	1,645	38,870	167,897	13,744	181,641
Connecticut	318,247	32,178	350,425	38,569	37,210	75,779	17,060	13,638	30,698	373,876	83,026	456,902
Delaware	35,048	3,544	38,592	7,959	600	8,559	22,096	3,045	25,141	65,103	7,189	72,292
D. C.	339,232	34,300	373,532	9		9	1,906	322	2,228	341,147	34,622	375,769
Florida	94,760	9,581	104,341	40,750	7,692	48,442	8,537	4,377	12,914	144,047	21,650	165,697
Georgia	217,429	21,985	239,414	35,488	14,343	49,831	14,981	21,229	36,210	267,898	57,557	325,455
Idaho	12,981	1,313	14,294	41,925	30	41,955	16,254	407	16,661	71,160	1,750	72,910
Illinois	2,434,555	246,161	2,680,716	185,474	75,684	261,158	210,170	211,456	421,625	2,830,199[4]	533,300	3,363,499
Indiana	406,084	41,060	447,144	15,392	71,294	86,686	135,690	254,810	390,500	557,166	367,164	924,330
Iowa	98,654	9,975	108,629	12,811	10,465	23,276	41,719	20,888	62,607	153,184	41,328	194,512
Kansas	80,914	8,181	89,095	1,686	492	2,178	37,115	11,675	48,790	119,715	20,348	140,063
Kentucky	140,626	14,219	154,845	15,420	46,454	61,874	21,035	126,127	147,162	177,081	186,800	363,881
Louisiana	109,904	11,113	121,017	25,419	65,182	90,601	20,733	11,005	31,738	156,056	87,300	243,356
Maine	27,260	2,756	30,016	106,145	97	106,242	19,220	24,185	43,405	152,625	27,038	179,663
Maryland	223,703	22,619	246,322	84,159	22,834	106,993	13,507	28,378	41,885	321,369	73,831	395,200
Massachusetts	870,797	88,047	958,844	263,814	22,913	286,727	46,047	93,811	139,858	1,180,658	204,771	1,385,429
Michigan	1,191,424	120,466	1,311,890	333,406	68,081	401,487	164,945	524,882	689,827	1,689,775	713,429	2,403,204
Minnesota	221,539	22,400	243,939	65,098	20,764	85,852	62,392	26,201	88,593	349,029	69,365	418,384
Mississippi	37,644	3,806	41,450	10,833	51,391	62,224	16,075	6,047	22,122	64,552	61,244	125,796
Missouri	398,295	40,272	438,567	92,445	37,888	130,333	60,563	54,468	115,031	551,303	132,628	683,931
Montana	19,038	1,925	20,963	55,178		55,178	9,457	253	9,710	83,673	2,178	85,851
Nebraska	79,832	8,072	87,904	8,034	5,295	13,329	23,792	7,302	31,094	111,658	20,669	132,327
Nevada	8,654	875	9,529				1,412	86	1,498	10,066	961	11,027
New Hampshire	6,707	678	7,385	133,100	1,107	134,207	6,620	26,322	32,942	146,427	28,107	174,534
New Jersey	827,528	83,672	911,200	140,726	5,171	145,899	79,703	67,089	146,792	1,047,959	155,932	1,203,891
New Mexico	13,414	1,356	14,770	27,325		27,325	1,132	36	1,168	41,871	1,392	43,263
New York	6,838,518	691,451	7,529,969	302,021	29,418	331,439	160,274	225,563	385,837	7,300,813[4]	946,432	8,247,245
North Carolina	218,511	22,094	240,605	151,022	20,948	171,970	27,649	203,872	231,521	397,182	246,914	644,096
North Dakota	13,414	1,356	14,770				1,315	27	1,342	14,729	1,383	16,112
Ohio	1,183,419	119,657	1,303,076	203,182	103,866	307,048	139,722	158,432	298,154	1,526,323	381,955	1,908,278
Oklahoma	174,376	17,631	192,007	1,636	1,526	3,162	7,936	1,659	9,595	183,948	20,816	204,764
Oregon	133,703	13,519	147,222	385,199		385,199	59,698	19,969	79,667	578,600	33,488	612,088
Pennsylvania	1,298,516	131,295	1,429,811	291,085	171,375	462,460	80,353	162,989	243,342	1,669,954	465,659	2,135,613
Rhode Island	173,078	17,500	190,578	23,690		23,690	2,387	4,211	6,598	199,155	21,711	220,866
South Carolina	22,716	2,297	25,013	32,959	23,967	56,926	5,136	8,316	13,452	60,811	34,580	95,391
South Dakota	12,548	1,269	13,817	6,431		6,431	5,750	112	5,862	24,729	1,381	26,110
Tennessee	199,039	20,125	219,164	35,493	18,734	54,227	28,157	83,904	112,061	262,689	122,763	385,452
Texas	556,012	56,219	612,231	8,061	27,870	35,931	32,085	16,597	48,682	596,158	100,686	696,844
Utah	41,539	4,200	45,739	3,865		3,865	4,719	291	5,010	50,123	4,491	54,614
Vermont	32,019	3,237	35,256	14,986	2,218	17,204	3,830	32,638	36,462	50,836	38,087	88,922
Virginia	120,289	12,163	132,452	156,042	31,427	187,469	39,289	95,819	135,108	315,620	139,409	455,029
Washington	303,319	30,669	333,988	504,924	6,402	511,326	105,803	13,940	119,743	914,046	51,011	965,057
West Virginia	44,135	4,463	48,598	8,349	28,446	36,705	102,039	8,673	110,712	154,523	41,582	196,105
Wisconsin	368,006	37,210	405,216	157,762	82,819	240,581	60,687	158,003	218,690	586,455	278,032	864,487
Wyoming	3,678	372	4,050				1,880	229	2,109	5,558	601	6,159
	21,634,717	2,187,513	23,822,230	4,189,218	1,285,063	5,474,281	2,117,065	2,828,424	4,945,489	27,941,000	6,301,000	34,242,000

Source: 1/ Computed.
2/ "Lumber Used in Manufacture 1928" - U.S.DA. Forest Service.
3/ Totals from Timber Conservation Board Report - July 30, 1931 - Chart #5 Less Exports From "World Lumber Press Information: Department of Commerce, Bureau of Foreign and Domestic Commerce, Issue #7 - February 10, 1935 - State Breakdown Computed, Page 3.

TABLE XXXII

CONSUMPTION OF DOMESTIC LUMBER BY THE CONSTRUCTION, WOODEN CONTAINER AND ALL OTHER INDUSTRIAL USERS FOR THE YEAR 1933
(M Ft. B.M.)

	Construction[1]			Wooden Container[2]			Lumber Industrially Consumed By Other Than Construction Products[2]			Total[3]		
	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total
Alabama	38,900	5,521	44,421	4,295	5,309	9,604	8,919	1,997	10,916	52,114	12,827	64,941
Arizona	10,500	1,487	11,987	26,552		26,552	894	1	895	37,946	1,488	39,434
Arkansas	8,200	1,164	9,364	13,892	30,963	44,855	5,347	29,368	34,715	27,439	61,495	88,934
California	1,936,700	274,782	2,211,482	391,261	63	391,324	59,338	9,969	69,307	2,387,299	284,814	2,672,113
Colorado	47,900	6,802	54,702	3,950	100	4,050	4,247	662	4,909	56,097	7,564	63,661
Connecticut	212,100	30,090	242,190	20,878	2,450	23,328	2,729	5,583	8,312	235,707	38,123	273,830
Delaware	41,400	5,871	47,271	4,501		4,501	324	213	537	46,225	6,084	52,309
D. C.	166,600	23,638	190,238	203		203	9	6	15	166,812	23,644	190,456
Florida	115,000	16,319	131,319	18,951	4,665	23,616	9,734	1,390	11,124	143,685	22,374	166,059
Georgia	63,600	9,026	72,626	16,806	12,228	29,034	14,342	12,003	26,345	94,748	33,257	128,005
Idaho	5,500	776	6,276	16,252	1	16,253	4,324	15	4,339	26,076	792	26,868
Illinois	251,200	35,637	286,837	91,237	49,552	140,789	56,942	69,888	126,830	399,379	155,077	554,456
Indiana	92,900	13,177	106,077	35,236	16,680	51,916	33,367	82,463	115,830	161,503	112,320	273,823
Iowa	78,900	11,198	90,098	4,249	645	4,894	7,460	4,809	12,269	90,609	16,652	107,261
Kansas	39,800	5,651	45,451	1,462	6,202	7,664	13,901	2,336	16,237	55,163	14,189	69,352
Kentucky	92,100	13,073	105,173	7,588	9,786	17,374	6,619	26,528	33,147	106,307	49,387	155,694
Louisiana	56,800	8,056	64,856	9,052	15,395	24,447	13,116	7,642	20,758	78,968	31,093	110,061
Maine	39,000	5,534	44,534	36,777	69	36,846	3,664	28,249	31,913	79,441	33,852	113,293
Maryland	171,801	24,375	196,175	31,676	8,376	40,052	4,663	10,562	15,225	208,139	43,313	251,452
Massachusetts	519,300	73,680	592,980	105,670	2,618	108,288	12,427	41,977	54,404	637,397	118,275	755,672
Michigan	168,200	23,870	192,070	111,948	17,738	129,686	43,475	102,660	146,135	323,623	144,268	467,891
Minnesota	180,500	25,603	206,103	27,668	24,193	51,861	28,523	10,588	39,111	236,691	60,384	297,075
Mississippi	15,900	2,250	18,150	18,472	18,526	36,998	5,055	1,858	6,913	39,427	22,634	62,061
Missouri	311,800	44,237	356,037	17,432	19,240	36,672	30,462	25,389	55,851	359,694	88,866	448,560
Montana	13,800	1,953	15,753	4,317		4,317	1,518	48	1,566	19,635	2,001	21,636
Nebraska	34,500	4,901	39,401	1,844	2,883	4,727	4,386	2,298	6,684	40,730	10,082	50,812
Nevada	3,600	517	4,117	7		7	585	82	667	4,192	599	4,791
New Hampshire	17,500	2,483	19,983	76,102	1,499	77,601	2,959	15,382	18,341	96,561	19,364	115,925
New Jersey	325,700	46,215	371,915	51,142	5,526	56,668	15,475	16,901	32,376	392,317	68,642	460,959
New Mexico	5,700	802	6,502	19,546		19,546	704	10	714	25,950	812	26,762
New York	2,132,800	302,596	2,435,396	100,556	15,221	115,777	67,964	97,411	165,375	2,301,320	415,228	2,716,548
North Carolina	65,600	9,310	74,910	68,121	17,622	85,743	14,748	122,690	137,438	148,469	149,622	298,091
North Dakota	5,700	802	6,502	76		76	255	10	265	6,031	812	6,843
Ohio	299,300	42,465	341,765	79,449	49,459	128,908	72,264	77,100	149,364	451,013	169,024	620,037
Oklahoma	75,600	10,720	86,320	2,242	160	2,402	3,314	251	3,565	81,156	11,131	92,287
Oregon	58,700	8,327	67,027	196,017	26	196,043	25,935	19,690	45,625	280,652	28,043	308,695
Pennsylvania	496,700	70,473	567,173	106,177	41,264	147,441	41,851	92,325	134,176	644,728	204,062	848,790
Rhode Island	24,300	13,383	107,683	7,669		7,669	593	1,373	1,966	102,5 2	14,756	117,318
South Carolina	6,700	3,453	27,753	12,265	2,703	14,968	2,586	2,330	4,916	39,151	8,486	47,637
South Dakota		944	7,644	3,356		3,356	1,012	23	1,035	11,068	967	12,035
Tennessee	90,800	12,879	103,679	10,402	17,319	27,721	13,087	88,135	101,222	114,289	118,333	232,622
Texas	301,200	42,737	343,937	15,392	17,779	33,171	16,532	11,007	27,539	333,124	71,523	404,647
Utah	14,200	2,017	16,217	442		442	1,303	356	1,659	15,945	2,373	18,318
Vermont	13,500	1,914	15,414	12,543	488	13,031	1,623	12,914	14,537	27,666	15,316	42,982
Virginia	121,600	17,250	138,850	50,942	17,423	68,365	16,419	68,285	84,704	188,961	102,958	291,919
Washington	111,600	15,827	127,427							296,462		
West Virginia	23,300	3,310	26,610	157,374	218	157,592	27,488	8,923	36,411	38,862	24,968	321,430
Wisconsin	111,200	15,776	126,976	8,318	26,800	35,118	5,244	3,412	8,656	195,18	33,522	70,384
Wyoming	1,500	220	1,720	54,055	33,576	87,631	30,463	50,667	81,130	2,820	100,019	295,737
				12		12	1,308	26	1,334		246	3,066
Total	9,114,000	1,293,091	10,407,091	2,054,374	494,765	2,549,139	739,497	1,167,805	1,907,302	11,907,871	2,955,661	14,863,532

Source: 1/ Computed.

2/ "Lumber Used in Manufacture 1933" U.S.D.A. Forest Service.

3/ Totals from Lumber Code Authority Docket #5 - 2nd Quarter 1934 - Less Exports from "Weekly Lumber Press Information," Department of Commerce, Bureau of Foreign and Domestic Commerce, Issue #7 - February 10, 1935, Page 3.

TABLE XXXIII

COMPARISON BETWEEN TOTAL CONSTRUCTION AND UNITS SHIPPED PER $1,000 OF CONSTRUCTION FOR SELECTED CONSTRUCTION PRODUCTS, DURING THE YEARS 1920 - 1934

	Estimated Total Annual Building and Engineering Expenditures 1/	Total Shipments of Lumber for Construction Purposes 2/ (Bd.Ft.)	Ft. B. M., of Lumber per $1,000 Construction 3/	Total Shipments of Portland Cement (bbls) 4/	Barrels of Cement per $1,000 Construction 3/	Total Shipments of Face Brick (M Bricks) 5/	Bricks per $1,000 Construction 3/
1920	$ 4,093,300,000	18,502,026,720	4,520	96,311,719	23.5	Not Available	Not Available
1921	3,922,700,000	18,146,265,300	4,626	95,507,147	24.3	do	do
1922	5,617,100,000	20,483,135,250	3,647	117,701,216	21.	do	do
1923	6,352,100,000	23,599,054,800	3,715	135,912,118	21.4	do	do
1924	6,889,600,000	22,850,467,250	3,317	146,047,549	21.2	do	do
1925	8,684,200,000	24,277,274,347	2,796	157,295,212	18.1	2,434,313	280.3
1926	8,921,600,000	23,265,300,824	2,608	162,187,090	18.2	2,391,323	268.0
1927	8,693,000,000	21,471,939,559	2,470	171,864,728	19.8	2,330,842	268.1
1928	8,949,600,000	23,822,159,400	2,662	175,838,332	19.6	2,399,521	268.1
1929	7,901,400,000	22,603,707,613	2,861	169,868,322	21.5	2,079,651	263.2
1930	5,894,900,000	16,089,099,397	2,729	159,059,334	27.	1,487,999	252.4
1931	4,293,733,000	11,836,619,432	2,757	127,150,534	29.6	1,045,735	243.5
1932	1,929,789,000	8,692,319,076	4,504	80,843,187	41.9	499,270	258.7
1933	1,761,898,000	10,162,614,946	5,768	64,086,000	36.4	363,900	206.5
1934	2,087,714,000	9,442,293,173	4,523	75,917,000*	36.4	372,218	170.2

Sources: 1/ Construction Unit, NRA.
2/ Computed from trigometric deviation based on 1928 and 1933 lumber shipped for construction purposes. Lumber shipment figures computed from Census production data and Forest Service Changes in Mill Stocks data.
3/ Computed
4/ "Mineral Resources," Bureau of Mines, 1920-33.
5/ Bureau of Census. Shipments computed from Stocks & Production data.

* Preliminary estimate from Cement Association.

SECT. II CHAPTER 2 TABLE XXXV
LUMBER AND TIMBER CORPORATIONS
(FOREST PRODUCTS INDUSTRIES)
CONDENSED BALANCE SHEET AND PROFIT AND LOSS DATA
(000 omitted in all dollar amounts)

	1926	1927	1928	1929	1930	1931	1932	1933
ASSETS	A	B	C	D	E	F	G	
			BALANCE SHEET DATA					
Cash	142,403	124,880	138,678	121,666	113,808	82,978	77,100	68,823
Receivables	609,463	558,985	612,707	620,034	490,624	369,319	326,705	297,506
Inventories	770,014	740,276	707,050	705,313	637,856	447,462	337,690	356,613
Capital Assets - Less Depreo. and Deple.	1,853,888	1,766,315	1,804,793	1,723,264	1,677,301	1,511,860	1,448,283	1,339,762
Securities - Not tax exempt	1/	1/	1/	264,368	257,991	292,381	327,220	291,591
" - Tax exempt	78,071	82,355	57,519	54,054	42,156	38,403	44,417	38,059
Miscellaneous Assets	571,519	540,893	428,091	183,660	224,058	150,155	143,010	156,379
Total Assets	4,023,358	3,793,704	3,748,838	3,672,359	3,443,793	2,892,578	2,704,425	2,548,733
LIABILITIES CAPITAL								
Notes and Accounts Payable	692,017	666,449	650,411	594,746	530,086	380,349	366,171	350,652
Other Liabilities	461,580	322,649	231,647	231,049	203,407	181,010	177,804	168,590
Bonded Debt and Mortgages	159,972	161,010	212,191	237,848	259,567	265,498	253,441	231,307
Preferred Stock	285,434	209,910	229,118	217,177	215,671	197,869	183,035	175,894
Common Stock	1,377,612	1,345,422	1,340,409	1,278,737	1,266,844	1,190,320	1,224,870	1,159,225
Surplus	1,046,743	1,088,264	1,085,062	1,112,802	968,218	677,032	499,104	463,065
Total Liabilities and Capital Interest	4,023,358	3,793,704	3,748,838	3,672,359	3,443,793	2,892,578	2,704,425	2,548,733
			PROFIT AND LOSS DATA					
Gross Sales	2,938,014	2,694,795	2,730,761	2,684,104	1,910,432	1,284,660	793,996	922,936
Less Cost of Sales	2,254,973	2,072,926	2,088,316	2,050,193	1,535,766	1,076,945	687,854	696,691
Gross Profit from Sales	683,041	621,869	642,445	633,911	374,666	207,715	106,112	226,245
Other Income	88,950	111,934	114,004	112,979	78,843	64,539	61,623	64,071
Net Profits	116,810	43,379	81,958	78,018	2/ 109,576	2/ 177,752	2/ 202,266	2/ 66,069
Cash Dividends Paid	124,291	108,566	112,558	102,973	68,962	35,241	25,860	14,855
Stock Dividends Paid	15,072	9,672	11,643	12,418	4,528	1,678	411	1,295
Income Tax Paid	21,907	15,619	15,210	13,437	3,591	1,379	2,237	3,254
			NUMBER OF CORPORATIONS REPORTING					
Number Reporting Net Income	4,591	4,178	4,290	4,195	2,340	1,525	541	1,638
Number Reporting No Net Income	3,271	3,353	3,367	3,294	4,868	5,150	5,929	4,882
Number Reporting Inactive	3/	285	290	380	293	279	237	359
Total Number Reporting	7,862	7,816	7,947	7,869	7,501	6,954	6,707	6,879
Number Reporting with Balance Sheets	7,244	7,230	7,190	7,094	6,824	6,137	6,147	6,161

1/ Not segregated from Miscellaneous Assets in this year.
2/ Deficit or Net Loss.
3/ Not tabulated.

Prepared by: D. N. Burnham, C.P.A.
Division of Review, NRA.
Source: Statistics of Income,
Bureau of Internal Revenue.

SECT. II CHAPTER 2 TABLE XXXV
LUMBER AND TIMBER CORPORATIONS
(FOREST PRODUCTS INDUSTRIES)
NUMBER OF CORPORATIONS REPORTING PROFIT AND NO PROFIT
IN EACH OF THE CLASSIFIED GROUPS

	1931	1932	1933
All Corporations			
Number Reporting Profit	1,354	520	1,584
Number Reporting No Profit	4,783	5,627	4,577
Total Number Reporting	6,137	6,147	6,161
Corporations With Total Assets Under $50,000			
Number Reporting Profit	480	210	499
Number Reporting No Profit	1,572	2,157	1,995
Total Number Reporting	2,052	2,367	2,494
$50,000 - $100,000			
Number Reporting Profit	262	92	301
Number Reporting No Profit	818	960	758
Total Number Reporting	1,080	1,052	1,079
$100,000 - $250,000			
Number Reporting Profit	321	102	393
Number Reporting No Profit	1,078	1,187	831
Total Number Reporting	1,399	1,289	1,224
$250,000 - $500,000			
Number Reporting Profit	126	54	187
Number Reporting No Profit	570	573	435
Total Number Reporting	696	627	622
$500,000 - $1,000,000			
Number Reporting Profit	91	37	101
Number Reporting No Profit	344	353	264
Total Number Reporting	435	390	365
$1,000,000 - $5,000,000			
Number Reporting Profit	65	23	87
Number Reporting No Profit	332	322	233
Total Number Reporting	397	345	320
$5,000,000 - $10,000,000			
Number Reporting Profit	6	2	13
Number Reporting No Profit	43	47	39
Total Number Reporting	49	49	52
$10,000,000 - $50,000,000			
Number Reporting Profit	3	0	2
Number Reporting No Profit	23	25	20
Total Number Reporting	26	25	22
Over $50,000,000			
Number Reporting Profit	0	0	1
Number Reporting No Profit	3	3	2
Total Number Reporting	3	3	3

Prepared by: D.N.Burnham, C.P.A.
Division of Review, NRA.
Source: Statistics of Income
Bureau of Internal Revenue.

SECT. III CHAPTER 2 TABLE XXXVI
CORPORATION RETURNS
CLASSIFIED BY MAJOR INDUSTRY GROUPS
PERCENTAGE OF CORPORATIONS REPORTING PROFIT

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
All Corporations													
Agriculture	42	36	44	42	46	47	44	45	44	42	32	23	11
Mines & Quarrying	40	25	36	28	27	29	31	28	28	29	27	22	17
Manufacturing-Total	63	46	59	63	59	61	59	57	57	57	43	33	16
Food Products	55	52	59	62	63	63	60	59	59	60	53	44	24
Tobacco "	1/	1/	1/	49	46	1/	58	59	54	56	48	41	30
Textiles	55	49	61	65	56	61	57	59	56	55	39	33	17
Leather	57	45	58	57	55	58	57	57	56	54	36	33	20
Rubber	42	31	48	45	51	55	50	51	48	49	37	32	18
Forest Products	73	44	66	71	62	61	58	53	54	53	31	22	08
Paper-Pulp	80	44	61	68	64	66	67	67	64	66	53	40	23
Printing-Publishing	79	64	66	67	65	66	66	63	64	63	52	39	18
Chemicals	52	42	57	55	55	57	56	55	56	54	45	39	23
Stone, Clay, Glass	73	54	63	69	63	62	60	55	55	53	38	26	10
Metal	67	35	53	63	56	59	60	56	59	61	39	24	10
Not Elsewhere Classified	60	41	55	60	58	59	53	51	50	48	37	26	13
Construction	70	58	62	65	66	63	60	57	57	52	44	33	11
Transportation & Public Utilities	63	62	67	68	65	63	62	60	59	57	51	46	28
Trade	66	49	62	68	65	66	63	61	61	59	44	34	15
Professional -Hotels Amusements	68	56	58	62	59	57	55	53	52	51	45	37	15
Banking, Ins. Real Estate Stocks & Bonds	70	65	64	65	64	63	59	57	55	53	47	39	18

1/ Not available as separate item

Prepared by: D. W. Burnham, C.P.A.
Division of Review, NRA.
Source: Statistics of Income
Bureau of Internal Revenue.

SECT. III CHAPTER 2 TABLE XXXVII
CORPORATE RETURNS
CLASSIFIED BY MAJOR INDUSTRY GROUPS
PERCENTAGE OF ASSET VALUES OF CORPORATIONS REPORTING PROFITS

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Agriculture	71	55	68	78	70	72	71	77	77	77	54	44	36
Mining & Quarrying	87	44	64	55	53	75	71	59	70	75	54	33	32
Manufacturing-Total	67	63	80	87	84	87	85	79	85	83	66	48	40
Food	61	67	77	83	88	86	86	67	89	71	64	57	61
Tobacco	1/	1/	1/	96	95	1/	97	98	98	96	93	92	94
Textiles	69	68	84	85	67	79	69	81	73	72	32	41	31
Leather	58	58	79	72	69	78	74	82	77	72	53	49	44
Rubber	77	18	59	84	84	93	72	72	67	64	51	49	20
Forest	89	58	84	91	78	80	76	69	72	71	36	33	11
Paper-Pulp	96	56	79	86	85	85	87	84	80	86	64	50	29
Printing	90	82	99	87	87	87	86	85	87	86	77	56	50
Chemicals	82	55	87	79	88	92	91	78	92	93	76	46	43
Stone Clay	94	77	87	92	88	90	90	85	84	84	73	46	28
Metal	89	62	77	92	88	80	90	85	89	53	74	40	16
Not elsewhere	83	66	82	87	82	87	79	79	81	76	58	46	32
Classified Construction	84	72	74	79	81	83	81	79	78	74	71	54	33
Transportation	85	80	83	88	89	92	92	85	90	91	81	51	43
Trade	75	64	79	82	82	82	82	82	81	79	63	53	40
Service, Professional, Amusements, Hotels	85	75	76	79	78	80	78	75	73	73	66	46	29
Finance	80	77	80	65	75	81	76	82	73	69	57	40	34

1/ Not available as separate item.

Prepared By: D. N. Burnham, C.P.A.
Division of Review NRA
Source: Statistics of Income,
Bureau of Internal Revenue.

TABLE XXXVIII

FOREST PRODUCTS CORPORATIONS
NET INCOME, OR LOSS, CASH DIVIDENDS
AND FEDERAL INCOME TAXES PAID

(,000 omitted in all dollar amounts)

Year	Net Income or Net Loss	Cash Dividends	Federal Income Taxes	Net Surplus Reduction
1926	$116,810	$124,291	$ 21,907	$ 29,388
1927	43,379	108,586	15,612	80,819
1928	81,958	112,558	15,210	45,810
1929	78,018	102,973	13,437	38,392
1930	1/ 109,576	68,962	3,591	182,129
1931	1/ 177,752	35,241	1,379	214,372
1932	1/ 202,266	25,860	2,237	230,363
1933	1/ 66,069	14,655	3,254	83,978
Totals for period	1/$235,498	$593,126	$76,627	$905,251

1/ Net Loss

Prepared by D. N. Burnham, C.P.A.
Division of Review, NRA

Source: Statistics of Income
Bureau of Internal Revenue

TABLE [illegible]

DISTRIBUTION OF HARDWOOD LUMBER
FROM PRODUCING REGIONS TO CONSUMING REGIONS AND STATES
1929

M Ft. Bd. M.

Region From / State To	Southern	Appalachian	North Central	Northern	Northeastern	Western	Total	Southern %	Appalachian %	North Central %	Northern %	Northeastern %	Western %
North Atlantic	57,920	52,312	2,405	4,176	165,172		281,985	20.54	18.55	.85	1.48	58.58	
Maine	3,254	2,430		204	26,722		32,610	9.98	7.45		.63	81.94	
New Hampshire	1,302	558			26,854		28,714	4.53	1.94			93.53	
Vermont	2,278	1,006	38	101	26,457		29,874	7.62	3.36	.13	.34	88.55	
Massachusetts	37,745	39,734	2,023	3,158	46,047		128,707	29.33	30.87	1.57	2.45	35.78	
Rhode Island	2,278	2,144	191	102	2,157		6,872	33.15	31.20	2.78	1.48	31.39	
Connecticut	11,063	6,146	153	611	36,375		[illegible]	[illegible]	[illegible]	.28	[illegible]	[illegible]	
Mid-Atlantic	532,987	300,296	18,976	15,585	252,337	1,736	1121,917	47.51	26.77	1.69	1.39	22.49	.15
New York	163,345	118,221	10,079	8,760	81,776	1,528	383,756	41.49	30.20	2.56	2.22	23.14	.39
New Jersey	66,054	25,727	1,184	815	12,855	208	106,843	61.82	24.08	1.11	.76	12.03	.20
Pennsylvania	247,621	132,[illegible]	7,063	5,806	145,230		537,625	46.06	24.54	1.31	1.08	27.01	
Delaware	4,230				44		4,274	98.97				1.03	
Maryland	50,761	22,297	610	204	3,182		76,954	65.96	28.97	.79	.27	4.13	
Dist. of Col.	976	1,429					2,405	40.58	59.42				
Southeastern	931,587	558,147	4,819	3,565	1,453	191	1,540,092	60.49	36.16	.31	.23	.10	.01
West Virginia	27,307	124,192	267	204			151,970	17.97	81.72	.18	.13		
Virginia	162,369	19,724	496	509	352		183,450	88.51	[illegible]	.27	.28	.19	
North Carolina	217,485	5,002	355	916	396	27	224,951	96.76	2.[illegible]	.16	.41	.18	.01
South Carolina	14,962	1,286		306	88		16,642	89.91	7.72		1.84	.53	
Georgia	50,110	572		306			50,988	98.28	1.12		.60		
Florida	18,222	429					18,651	97.70	2.30				
Alabama	38,070	1,000		509			39,579	96.19	2.53		1.28		
Mississippi	97,617	429		102			98,148	99.46	.44		.10		
Tennessee	216,383	294,579	115	204			511,281	42.32	57.62	.02	.04		
Kentucky	89,156	150,934	3,016	506	617	162	244,396	36.48	61.76	1.23	.21	.25	.07
Lake States	710,542	440,081	351,[illegible]	982,861	20,382	3,787	2,508,[illegible]	28.33	16.57	14.16	37.67	.78	.15
Ohio	150,955	172,502	140,955	17,826	8,452	37	490,717	30.76	35.22	28.72	3.63	1.72	.01
Indiana	135,266	56,171	121,522	23,123	884	172	341,178	40.32	16.46	35.62	6.78	.27	.05
Illinois	273,901	70,322	39,629	140,161	1,201	2,076	526,290	51.87	13.36	7.53	26.64	.22	.38
Michigan	205,320	112,772	46,310	429,940	9,685	1,141	804,268	25.53	14.02	5.76	53.35	1.20	.14
Wisconsin	27,383	20,582	1,565	276,551	132	372	327,[illegible]	8.38	6.29	.48	84.35	.04	.11
Minnesota	14,327	7,432	1,184	96,157	88		119,188	12.02	6.24	.99	80.68	.07	
Mid-Western	236,557	22,298	2,520	7,130	264	14,560	283,329	83.31	8.51	.88	2.50	.09	5.11
Missouri	168,551	17,152	2,405	1,833	264	353	190,558	88.45	9.00	1.26	.96	.14	.19
Kansas	27,658	1,143		815		1,092	30,708	90.17	3.72		2.65		3.56
Iowa	25,055	5,574	115	3,759		13,145	47,658	52.57	11.70	.24	7.91		27.58
Nebraska	7,484	429		204			8,117	92.20	5.29		2.51		
South Dakota	7,809			204			8,013	97.45			2.55		
North Dakota				305			305				100.00		
Southwestern	630,277	6,146	1,604	1,019		46	639,092	98.62	.96	.25	.16		.01
Arkansas	248,771	3,439	878				253,[illegible]	98.29	1.36	.35			
Louisiana	233,629	2,287	611	102			236,629	98.73	.97	.26	.04		
Texas	132,108	424	115	917		46	133,615	98.87	.32	.09	.69		.03
Oklahoma	16,269						16,269	100.00					
Inter-Mountain	6,152	858		407		771	8,218	75.23	10.44		4.95		9.38
Montana	325	286				82	693	46.90	41.27				11.83
Idaho													
Wyoming	325					4	329	98.78					1.22
Colorado	1,952	572		306		421	3,251	60.05	17.59		9.41		12.95
Utah	1,302			101		264	1,667	78.10			6.06		15.84
Arizona	976						976	100.00					
Nevada													
New Mexico	1,302						1,302	100.00					
Pacific Coast	47,832	6,861	305	3,871	616	24,172	83,659	57.17	8.20	.36	4.63	.74	28.90
Washington	1,302		76	204		9,372	10,954	11.89		.69	1.86		85.56
Oregon	650	4,145	153	1,732		10,155	16,835	3.86	24.62	.91	10.29		60.32
California	45,880	2,716	76	1,935	616	4,647	55,870	82.12	4.86	.14	3.46		8.32
GRAND TOTAL	3,253,852 1/	1,429,299 1/	381,754 1/	1,018,614 1/	440,224 1/	45,235 1/	6,569,100 2/	49.53	21.76	5.81	15.51	1.10	.69

SOURCE: Lumber Code Authority Docket #5, 2nd. quarter, 1935. "Lumber Distribution and Consumption, 1929", Department of Agriculture Forest Service [illegible]. (Also [illegible] sheets of similar data for the years 1928 and 1934). "World Lumber [illegible]", Department of Commerce, Bureau of Foreign and Domestic Commerce [illegible].

1/ L. C. A. hardwood shipment figures less hardwood exports and apportioned to each region of origin and the total of each region of origin then apportioned [illegible] on the basis of Forest Service data. Figures adjusted on basis of 1928 Forest Service data.

2/ L. C. A. hardwood shipments less hardwood exports.

TABLE X

DISTRIBUTION OF HARDWOOD LUMBER
FROM PRODUCING REGIONS TO CONSUMING REGIONS AND STATES
1932
(M Ft. Bd. M.)

Region From / State To	Southern	Appalachian	North Central	Northern	Northeastern	Western	Total	Southern (%)	Appalachian (%)	North Central (%)	Northern (%)	Northeastern (%)	Western (%)
	M Ft. Bd. M.							Percentage					
North Atlantic	22,888	22,518	1,267	4,482	97,542	1,393	149,889	15.27	15.03	.85	2.99	64.94	.92
Maine	542	1,299	-	124	19,084	-	21,049	2.57	6.17	-	.59	90.67	-
New Hampshire	1,083	595	-	329	6,287	-	8,294	13.06	7.17	-	3.97	75.80	-
Vermont	1,354	217	-	41	31,658	-	33,270	4.07	.65	-	.12	95.16	-
Massachusetts	11,647	14,669	1,218	3,207	29,809	198	60,748	19.17	24.15	2.00	5.28	49.07	.33
Rhode Island	1,490	920	-	41	1,208	-	3,659	40.72	25.14	-	1.12	33.02	-
Connecticut	6,772	4,818	49	740	9,295	1,195	22,859	29.62	21.07	.21	3.24	40.62	5.23
Mid-Atlantic	186,220	147,776	16,085	12,253	141,723	2,972	507,029	36.73	29.15	3.17	2.42	27.95	.58
New York	62,028	50,125	13,323	6,867	54,835	2,448	189,626	32.71	26.43	7.03	3.62	28.92	1.29
New Jersey	12,324	11,855	390	1,562	7,249	99	33,479	36.81	35.41	1.16	4.67	21.65	.30
Pennsylvania	86,135	74,538	2,145	3,043	77,321	33	243,215	35.42	30.65	.88	1.25	31.79	.01
Delaware	2,303	217	-	-	-	-	2,520	91.39	8.61	-	-	-	-
Maryland	23,024	10,555	227	617	2,318	392	37,133	62.00	28.42	.62	1.66	6.24	1.06
Dist. of Col.	406	486	-	164	-	-	1,056	38.45	46.02	-	15.53	-	-
Southeastern	549,991	239,689	3,883	2,467	1,553	-	797,583	68.96	30.05	.49	.31	.19	-
West Virginia	15,168	55,971	65	82	-	-	71,286	21.28	78.52	.09	.11	-	-
Virginia	102,929	8,174	179	329	123	-	111,734	92.12	7.32	.16	.29	.11	-
North Carolina	212,754	7,037	49	206	148	-	220,194	96.62	3.20	.02	.09	.07	-
South Carolina	12,866	1,949	-	124	-	-	14,939	86.12	13.05	-	.83	-	-
Georgia	12,324	217	-	452	641	-	13,634	90.39	1.59	-	3.32	4.70	-
Florida	7,314	54	-	-	-	-	7,368	99.27	.73	-	-	-	-
Alabama	13,272	-	-	82	-	-	13,354	99.39	-	-	.61	-	-
Mississippi	67,175	-	-	164	-	-	67,339	99.76	-	-	.24	-	-
Tennessee	83,426	112,020	227	288	-	-	195,961	42.79	56.94	.12	.15	-	-
Kentucky	22,753	55,267	3,363	740	641	-	82,764	27.49	66.78	4.06	.89	.78	-
Lake States	212,900	123,635	139,822	382,819	5,942	6,572	871,690	24.42	14.18	16.04	43.93	.68	.75
Ohio	53,902	64,361	56,491	9,416	3,920	792	188,882	28.54	34.07	29.91	4.98	2.08	.42
Indiana	37,057	10,231	47,750	8,553	123	165	104,879	36.28	9.75	45.53	8.16	.12	.16
Illinois	75,707	26,470	28,855	56,539	247	3,247	191,065	39.63	13.85	15.10	29.59	.13	1.70
Michigan	34,506	17,627	5,036	153,621	1,542	1,412	213,744	16.14	8.24	2.36	71.87	.72	.66
Wisconsin	6,771	3,735	1,690	117,066	-	264	129,526	5.22	2.88	1.30	90.17	-	.23
Minnesota	3,657	1,151	-	37,624	-	392	42,824	8.53	2.78	-	87.78	-	.91
Mid-Western	97,918	5,521	926	5,795	-	1,587	111,750	87.62	4.94	.83	5.19	-	1.42
Missouri	78,145	4,695	926	2,385	-	286	86,437	90.45	5.39	1.07	2.76	-	.33
Kansas	5,959	271	-	493	-	-	6,723	88.64	4.03	-	7.33	-	-
Iowa	9,071	521	-	2,056	-	862	12,510	72.51	4.12	-	16.43	-	6.86
Nebraska	4,169	54	-	711	-	183	5,117	82.05	.99	-	13.60	-	3.36
South Dakota	271	-	-	123	-	-	394	68.78	-	-	31.22	-	-
North Dakota	-	-	-	-	-	267	267	-	-	-	-	-	100.00
Southwestern	270,730	595	-	452	-	-	271,777	99.61	.22	-	.17	-	-
Arkansas	135,297	487	-	41	-	-	135,825	99.61	.36	-	.03	-	-
Louisiana	76,114	-	-	82	-	-	76,196	99.89	-	-	.11	-	-
Texas	51,735	-	-	288	-	-	52,023	99.45	-	-	.55	-	-
Oklahoma	7,584	108	-	41	-	-	7,733	98.07	1.40	-	.53	-	-
Inter-Mountain	1,625	54	-	905	-	513	3,097	52.47	1.74	-	29.22	-	16.57
Montana	-	-	-	329	-	44	373	-	-	-	88.20	-	11.80
Idaho	-	-	-	164	-	154	318	-	-	-	51.57	-	48.43
Wyoming	-	-	-	82	-	110	192	-	-	-	42.71	-	57.29
Colorado	677	-	-	82	-	121	880	76.93	-	-	9.32	-	13.75
Utah	271	54	-	124	-	84	533	50.84	10.13	-	23.26	-	15.77
Nevada	-	-	-	-	-	-	-	-	-	-	-	-	-
Arizona	-	-	-	-	-	-	-	-	-	-	-	-	-
New Mexico	677	-	-	124	-	-	801	84.52	-	-	15.48	-	-
Pacific Coast	12,053	1,516	487	2,615	-	23,614	39,685	30.37	3.82	1.23	6.59	-	59.50
Washington	406	108	-	452	-	6,120	7,086	5.73	1.52	-	6.38	-	86.37
Oregon	271	-	-	452	-	14,482	15,205	1.78	-	-	2.98	-	95.24
California	11,376	1,408	487	1,111	-	3,012	17,394	65.40	8.09	2.80	6.39	-	17.32
GRAND TOTAL	1,354,325 1/	541,314 1/	162,420 1/	411,191 1/	246,880 1/	36,652 1/	2,752,500 2/	49.20	19.67	5.90	14.94	8.96	1.33

Source: Lumber Code Authority - Docket 45, 2nd Quarter, 1933. "Lumber Distribution and Consumption", Dept. of Agriculture, Forest Service, 1934. (also work sheets of similar data for the years [illegible] and 1934). "World Lumber Press Information" Dept. of Commerce, Bureau of Foreign & Domestic Commerce, Issue #7, Feb. 11, 1935 - p. 3

1/ L. C. A. hardwood shipment figures less hardwood exports and apportioned to each region of origin on the total of each region of origin then apportioned to each state on the basis of Forest Service data.

2/ L. C. A. hardwood shipments less hardwood exports

TABLE XLI

DISTRIBUTION OF HARDWOOD LUMBER
FROM PRODUCING REGIONS TO CONSUMING REGIONS AND STATES
1934
(M Ft. Bd. M.)

Region from- / State to:	Southern	Appalachian	North Central	Northern	North eastern	Western	Total	Southern	Appalachian	North Central	Northern	North eastern	Western
North Atlantic	10,259	11,285	1,154	1,338	65,146	937	90,119	11.38	12.52	1.28	1.49	72.29	1.04
Maine	331	239	27	343	18,476	427	19,843	1.67	1.20	.14	1.73	93.11	2.15
New Hampshire	221	287	-	171	13,019	-	13,698	1.61	2.10	-	1.25	95.04	-
Vermont	110	143	-	-	10,654	-	10,907	1.01	1.31	-	-	97.68	-
Massachusetts	7,170	6,025	859	584	17,051	105	31,794	22.55	18.95	2.70	1.84	53.63	.33
Rhode Island	662	1,100	-	69	694	-	2,525	26.22	43.56	-	2.73	27.49	-
Connecticut	1,765	3,491	268	171	5,252	405	11,352	15.55	30.75	2.36	1.51	46.26	3.57
Mid-Atlantic	190,848	106,011	7,570	4,322	108,326	603	417,680	45.69	25.38	1.81	1.04	25.94	.14
New York	63,322	45,284	2,255	1,543	38,641	352	151,397	41.83	29.91	1.49	1.02	25.52	.23
New Jersey	17,320	8,129	201	69	4,258	-	29,977	57.78	27.12	.67	.23	14.20	-
Pennsylvania	76,339	45,235	4,510	2,504	64,714	-	193,302	39.49	23.40	2.33	1.30	33.48	-
Delaware	2,868	430	-	-	-	-	3,298	86.96	13.04	-	-	-	-
Maryland	30,227	6,503	604	137	713	251	38,435	78.64	16.92	1.57	.36	1.86	.65
District of Columbia	772	430	-	69	-	-	1,271	60.74	33.83	-	5.43	-	-
Southeastern	411,040	220,197	2,174	823	2,194	56	636,484	64.58	34.60	.34	.13	.34	.01
West Virginia	2,648	55,850	67	34	1,669	-	60,268	4.39	92.67	.11	.06	2.77	-
Virginia	71,044	3,873	-	103	-	-	75,020	94.70	5.16	-	.14	-	-
North Carolina	119,252	2,821	-	69	-	-	122,142	97.63	2.31	-	.06	-	-
South Carolina	5,516	-	-	-	-	-	5,516	100.00	-	-	-	-	-
Georgia	12,907	48	81	274	525	-	13,835	93.29	.36	.58	1.98	3.79	-
Florida	22,174	430	-	-	-	-	22,604	98.10	1.90	-	-	-	-
Alabama	20,409	669	-	34	-	-	21,112	96.67	3.17	-	.16	-	-
Mississippi	44,347	48	-	-	-	-	44,395	99.89	.11	-	-	-	-
Tennessee	93,327	107,398	13	240	-	-	200,978	46.44	53.44	.01	.11	-	-
Kentucky	19,416	49,060	2,013	69	-	56	70,614	27.50	69.48	2.85	.10	-	.07
Lake States	177,831	125,759	120,224	331,798	11,799	1,484	768,895	23.13	16.36	15.64	43.15	1.53	.19
Ohio	35,191	70,292	52,508	5,830	6,216	45	172,082	20.45	40.85	30.51	3.39	4.77	.03
Indiana	36,405	10,079	37,703	6,071	900	22	91,190	39.92	11.06	41.35	6.66	.99	.02
Illinois	60,895	23,526	20,295	56,455	1,913	693	163,777	37.18	14.36	12.39	34.47	1.18	.42
Michigan	39,714	17,453	8,040	144,497	714	375	210,793	18.84	8.28	3.81	68.55	.34	.18
Wisconsin	2,758	2,391	1,302	83,138	56	244	89,889	3.07	2.66	1.44	92.49	.07	.27
Minnesota	2,868	2,008	376	35,807	-	105	41,164	6.97	4.88	.91	86.99	-	.25
Mid-Western	70,603	9,324	2,846	3,738	113	535	87,159	81.00	10.70	3.27	4.29	.13	.61
Missouri	58,027	8,607	2,846	1,748	113	41	71,382	81.29	12.06	3.99	2.45	.16	.05
Kansas	5,295	191	-	617	-	296	6,399	82.75	2.98	-	9.64	-	4.63
Iowa	4,744	526	-	892	-	116	6,278	75.57	8.37	-	14.21	-	1.85
Nebraska	2,537	-	-	309	-	41	2,887	87.88	-	-	10.70	-	1.42
South Dakota	-	-	-	69	-	41	110	-	-	-	62.73	-	37.27
North Dakota	-	-	-	103	-	-	103	-	-	-	100.00	-	-
Southwestern	228,356	2,630	-	34	-	209	231,229	98.76	1.14	-	.01	-	.09
Arkansas	119,363	1,769	-	-	-	209	121,341	98.37	1.46	-	-	-	.17
Louisiana	59,571	765	-	-	-	-	60,336	98.73	1.27	-	-	-	-
Texas	47,216	96	-	34	-	-	47,346	99.73	.20	-	.07	-	-
Oklahoma	2,206	-	-	-	-	-	2,206	100.00	-	-	-	-	-
Inter-Mountain	1,655	48	-	240	-	959	2,902	57.03	1.65	-	8.27	-	33.05
Montana	-	-	-	137	-	139	276	-	-	-	49.64	-	50.36
Idaho	-	-	-	-	-	112	112	-	-	-	-	-	100.00
Wyoming	221	-	-	-	-	-	221	100.00	-	-	-	-	-
Colorado	772	48	-	-	-	86	906	85.21	5.30	-	-	-	9.49
Utah	331	-	-	103	-	112	546	60.62	-	-	18.86	-	20.52
Nevada	-	-	-	-	-	510	510	-	-	-	-	-	100.00
Arizona	331	-	-	-	-	-	331	100.00	-	-	-	-	-
New Mexico	-	-	-	-	-	-	-	-	-	-	-	-	-
Pacific Coast	12,576	2,917	255	686	-	32,698	49,132	25.60	5.94	.51	1.40	-	66.55
Washington	883	239	-	137	-	12,964	14,223	6.21	1.68	-	.96	-	91.15
Oregon	221	96	-	103	-	16,402	16,822	1.31	.57	-	.61	-	97.51
California	11,472	2,582	255	446	-	3,332	18,087	63.43	14.27	1.41	2.47	-	18.42
Grand Total	1,103,168 1/	476,171 1/	134,223 1/	342,979 1/	187,578 1/	37,481 1/	2,283,600 2/	48.31	20.94	5.88	15.02	8.21	1.64

Source: Lumber Code Authority Docket #5, 2nd. quarter, 1935.
"Lumber Distribution and Consumption," Department of Agriculture, Forest Service 1934. (Also work sheets of similar data for the years 1928 and 1934.)
"World Lumber Press Information," Department of Commerce, Foreign and Domestic Commerce, Issue #7, February 10, 1935, p. 3.

1/ L. C. A. hardwood shipment figures less hardwood exports and apportioned to each region of origin and the total of each of origin then apportioned to each state on the basis of Forest Service data.

2/ L. C. A. hardwood shipments less hardwood exports.

TABLE XLII

SHIPMENTS OF PRINCIPAL SOFTWOOD SPECIES OF LUMBER TO STATES FROM PRINCIPAL PRODUCING REGIONS
(THOUSAND FEET-BOARD MEASURE)

1 9 2 9

State & Region	Footage W P 1/	Footage Y P 3/	Footage D F 4/	Footage Total	Per Cent W P	Per Cent Y P	Per Cent D F
North Atlantic	187,192	348,237	311,076	662,505	19.38	44.55	36.07
Maine	7,907	22,626	13,037	43,770	16.06	52.15	22.79
New Hampshire	13,527	20,871	6,992	41,350	32.71	49.28	16.91
Vermont	4,177	9,817	3,410	17,404	24.00	56.41	19.59
Massachusetts	62,403	176,894	162,293	401,590	14.55	41.95	38.50
Rhode Island	10,045	44,067	100,332	154,444	6.51	22.54	64.95
Connecticut	44,133	104,762	25,012	183,927	26.71	56.68	13.60
Mid Atlantic	681,053	2,310,667	1,452,475	4,444,195	15.33	51.99	32.68
New York	360,045	808,611	905,869	2,074,725	17.36	38.98	43.66
New Jersey	100,803	312,672	20,895	434,370	23.21	71.98	4.81
Pennsylvania	185,545	820,445	265,237	1,271,225	14.60	64.54	20.80
Delaware	2,864	32,937	51,894	87,735	3.26	37.55	59.16
Maryland	14,273	291,810	206,750	512,833	2.78	56.90	40.32
District of Columbia	17,505	43,992	1,830	63,327	27.64	69.47	2.89
Southeast	30,185	2,998,637	68,462	3,117,484	.97	96.19	2.84
West Virginia	7,857	72,582	13,787	94,226	8.34	77.03	14.63
Virginia	6,002	350,752	33,364	371,018	2.19	88.67	8.94
North Carolina	2,337	492,243	601	495,273	.47	99.39	.14
South Carolina	398	115,629	9,158	125,185	.32	92.38	7.30
Georgia	1,790	327,182	663	329,635	.54	99.26	.20
Florida	99	301,326	6,505	307,930	.03	98.21	1.78
Alabama	645	417,279	3,285	421,419	.19	99.08	.75
Mississippi	408	315,675	1,039	317,112	.13	99.55	.32
Tennessee	2,665	311,349	11,333	325,347	.83	95.70	3.47
Kentucky	4,874	214,620	8,645	248,139	1.97	96.55	3.46
Lake States	801,596	2,321,345	1,373,457	4,496,400	17.83	51.62	30.55
Ohio	110,609	499,880	119,521	930,001	11.89	75.26	12.85
Indiana	36,203	391,944	98,275	526,421	6.88	74.45	18.67
Illinois	274,213	817,790	411,871	[illegible]	15.38	56.10	28.42
Michigan	119,849	104,186	145,211	659,344	18.18	49.80	22.02
Wisconsin	161,473	18,142	210,677	390,492	41.14	4.70	53.95
Minnesota	149,249	4,105	388,102	541,647	27.55	.76	71.69
Mid Western	600,930	407,101	1,211,441	2,219,472	27.07	[illegible]	54.58
Missouri	78,126	348,293	171,506	597,932	13.20	57.49	29.11
Kansas	61,168	301,850	288,447	651,465	13.40	[illegible]	43.61
Iowa	210,060	45,812	270,917	526,829	39.86	[illegible]	51.16
Nebraska	93,144	16,012	208,357	317,511	29.34	5.04	65.62
South Dakota	26,665	105	140,616	167,376	15.93	.06	84.01
North Dakota	31,777	31	132,161	163,969	19.38	.02	80.60
Southwestern	77,131	1,973,582	128,160	[illegible]	3.54	[illegible]	[illegible]
Arkansas	5,273	141,354	10,326	166,958	3.16	[illegible]	[illegible]
Louisiana	1,442	417,790	10,477	434,709	.34	[illegible]	[illegible]
Texas	41,862	1,138,177	187,555	1,360,494	1.20	[illegible]	[illegible]
Oklahoma	28,554	271,758	120,706	419,018	6.34	[illegible]	[illegible]
Intermountain	728,814	2,578	620,573	1,347,965	53.77	.19	46.04
Montana	181,465	104	64,973	246,542	73.60	.04	26.36
Idaho	192,863	115	42,619	235,607	81.86	.05	18.10
Wyoming	23,123	73	116,838	[illegible]	16.46	.05	[illegible]
Colorado	90,011	1,165	137,704	[illegible]	[illegible]	.51	60.16
Utah	36,750	-	136,069	172,819	21.27	-	78.73
Nevada	36,600	-	44,122	80,922	45.46	-	54.52
Arizona	145,162	-	40,614	185,776	78.14	-	21.86
New Mexico	18,450	1,073	35,624	[illegible]	33.46	1.94	64.60
Pacific Coast	1,990,095	1,102	3,069,227	5,060,424	39.33	.02	60.65
Washington	413,706	399	834,167	1,248,269	33.14	.03	66.83
Oregon	191,311	-	402,084	593,395	32.24	-	67.76
California	1,385,080	703	1,832,981	3,218,764	43.03	.02	56.95
Grand Total	4,972,908 2/	10,499,399 2/	8,456,377 2/	23,928,774	20.78	43.88	35.34

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State & Region	Footage W P 1/	Footage Y P 3/	Footage D F 4/	Footage Total	Per Cent W P	Per Cent Y P	Per Cent D F
North Atlantic	83,513	97,035	172,900	353,448	23.63	27.45	48.92
Maine	3,950	7,412	15,765	27,127	14.56	27.32	58.12
New Hampshire	6,756	6,402	433	13,591	49.71	47.10	3.19
Vermont	2,087	3,369	1,950	7,406	28.18	45.49	26.33
Massachusetts	41,160	46,159	88,622	175,941	23.39	26.24	50.37
Rhode Island	5,018	6,424	37,000	48,442	[illegible]	13.80	73.51
Connecticut	24,542	25,769	29,130	78,941	31.08	32.01	36.90
Mid Atlantic	340,185	695,084	536,353	1,571,622	21.65	44.23	34.12
New York	179,842	263,142	359,047	802,031	22.42	32.81	44.77
New Jersey	50,751	114,556	2,167	167,074	30.14	68.57	1.29
Pennsylvania	92,678	222,036	101,499	416,213	22.27	53.35	24.38
Delaware	1,441	9,097	13,928	24,466	5.89	37.18	56.93
Maryland	7,129	66,375	59,495	132,999	5.36	44.91	44.73
District of Columbia	8,744	19,878	217	28,839	30.32	68.93	0.75
Southeast	15,077	985,960	57,807	1,058,844	1.41	93.18	5.41
West Virginia	3,925	25,943	1,950	31,818	12.33	81.54	6.13
Virginia	5,446	144,585	40,829	190,860	2.79	[illegible]	21.06
North Carolina	1,167	125,337	428	126,932	.92	98.74	.34
South Carolina	199	78,178	6,521	85,898	.23	92.18	7.59
Georgia	494	108,154	1,730	110,378	.45	97.03	1.56
Florida	50	91,645	2,353	94,048	.05	97.45	2.50
Alabama	422	78,842	1,287	80,551	.52	97.88	1.60
Mississippi	199	102,703	217	103,378	.19	98.60	.21
Tennessee	1,341	75,809	325	77,475	1.73	97.85	.42
Kentucky	2,434	159,704	2,167	164,305	1.48	97.20	1.32
Lake States	400,198	664,523	436,551	1,501,470	26.67	44.26	29.07
Ohio	55,244	209,570	29,905	294,719	18.74	71.11	10.15
Indiana	18,084	136,170	18,677	172,931	10.46	78.76	10.78
Illinois	117,004	197,771	114,095	423,870	26.42	46.60	26.92
Michigan	59,864	112,109	[illegible]	215,620	27.76	52.04	20.20
Wisconsin	80,655	7,710	84,515	172,920	46.64	4.46	48.88
Minnesota	74,542	1,111	145,842	221,500	33.65	.50	65.85
Mid Western	250,213	195,249	408,920	854,382	29.29	22.85	47.86
Missouri	39,624	125,674	64,284	[illegible]	[illegible]	[illegible]	[illegible]
Kansas	[illegible]	49,421	77,669	147,003	[illegible]	[illegible]	[illegible]
Iowa	108,924	[illegible]	112,036	[illegible]	41.86	[illegible]	46.84
Nebraska	46,525	7,749	65,119	119,393	38.97	6.49	54.54
South Dakota	13,314	101	54,609	68,024	19.57	.15	80.28
North Dakota	15,873	67	45,181	61,121	25.97	.11	73.92
Southwestern	38,527	715,301	36,935	790,768	4.87	90.46	4.67
Arkansas	7,633	91,982	866	95,481	2.76	96.34	.80
Louisiana	720	[illegible]	1,601	177,616	.41	98.64	.95
Texas	21,900	[illegible]	24,974	430,484	5.02	89.49	5.49
Oklahoma	18,262	57,015	10,422	81,762	[illegible]	[illegible]	12.80
Intermountain	[illegible]	4,861	[illegible]	608,581	59.40	.74	39.77
Montana	90,061	-	33,697	124,138	72.60	-	27.10
Idaho	[illegible]	-	25,768	122,119	78.58	-	21.12
Wyoming	11,640	371	28,281	40,302	28.91	.92	70.17
Colorado	44,960	850	47,673	[illegible]	47.69	1.75	50.56
Utah	[illegible]	-	43,233	61,590	29.81	-	70.19
Nevada	[illegible]	-	40,761	59,173	31.09	-	68.91
Arizona	[illegible]	-	9,752	87,260	88.34	-	11.56
New Mexico	9,216	2,460	12,893	24,569	37.51	10.01	52.48
Pacific Coast	994,067	1,651	1,114,898	[illegible]	47.01	.08	52.91
Washington	206,444	418	278,119	485,221	42.59	.09	57.32
Oregon	[illegible]	-	[illegible]	[illegible]	[illegible]	-	61.44
California	681,444	1,213	686,520	[illegible]	50.06	.08	49.84
Grand Total	2,484,002 2/	3,340,284 2/	3,033,320 2/	8,663,706	28.02	34.02	37.96

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State & Region	Footage W P 1/	Footage Y P 3/	Footage D F 4/	Footage Total	Per Cent W P	Per Cent Y P	Per Cent D F
North Atlantic	92,794	90,314	225,870	408,978	22.68	22.08	55.23
Maine	4,134	6,887	8,540	19,561	21.13	35.26	43.61
New Hampshire	8,916	5,953	1,785	16,654	53.55	35.74	10.71
Vermont	3,376	3,120	1,394	7,841	42.63	39.78	17.79
Massachusetts	40,506	42,980	127,160	210,646	19.23	20.40	60.37
Rhode Island	5,444	7,841	39,604	53,079	10.26	14.77	74.99
Connecticut	30,472	23,523	47,200	101,195	30.11	23.25	46.64
Mid Atlantic	343,198	632,199	654,967	1,632,364	20.90	38.73	40.37
New York	178,930	217,575	452,720	847,244	20.88	25.68	53.44
New Jersey	52,026	82,104	6,465	140,595	37.00	58.40	4.60
Pennsylvania	95,876	242,206	115,956	453,998	21.12	53.35	25.54
Delaware	1,586	12,315	23,403	37,304	4.25	33.01	62.74
Maryland	8,840	61,578	60,357	130,775	6.76	47.06	46.15
District of Columbia	5,980	16,471	77	22,478	26.60	73.04	.35
Southeast	16,510	899,034	75,061	990,605	1.67	90.76	7.57
West Virginia	4,030	49,262	10,853	64,145	6.28	76.80	16.92
Virginia	4,342	90,314	41,682	136,338	3.18	66.25	30.57
North Carolina	962	61,578	2,728	65,268	1.47	94.35	4.18
South Carolina	104	24,633	3,615	28,350	.37	86.89	12.75
Georgia	1,170	65,683	1,617	68,470	1.71	95.93	2.36
Florida	27	135,471	3,870	139,367	.01	97.21	2.78
Alabama	884	71,893	4,175	77,952	1.13	94.80	4.07
Mississippi	1,628	119,050	465	121,143	1.35	98.27	.38
Tennessee	1,196	143,681	933	145,810	.82	98.44	.64
Kentucky	2,154	135,471	6,183	143,753	1.50	94.24	4.26
Lake States	522,106	1,117,230	619,202	2,258,538	23.12	49.47	27.41
Ohio	58,168	336,624	45,424	440,213	13.21	76.47	10.32
Indiana	21,316	[illegible]	28,677	286,440	8.31	81.68	10.01
Illinois	161,978	303,784	[illegible]	[illegible]	25.62	48.67	26.31
Michigan	72,020	229,890	90,926	[illegible]	[illegible]	[illegible]	[illegible]
Wisconsin	104,976	17,316	100,928	[illegible]	[illegible]	[illegible]	[illegible]
Minnesota	101,244	62	146,971	248,835	[illegible]	.21	[illegible]
Mid Western	369,966	320,301	619,510	1,308,779	[illegible]	25.22	[illegible]
Missouri	50,464	201,154	71,702	[illegible]	15.61	62.21	22.18
Kansas	31,382	[illegible]	[illegible]	[illegible]	13.98	[illegible]	[illegible]
Iowa	149,638	[illegible]	[illegible]	357,173	41.92	[illegible]	50.00
Nebraska	57,172	12,316	114,670	184,068	31.28	6.64	62.06
South Dakota	18,174	57	66,640	86,877	20.97	.06	78.97
North Dakota	22,134	44	71,081	[illegible]	23.90	.04	76.06
Southwestern	45,604	1,062,716	64,619	1,172,939	[illegible]	[illegible]	7.29
Arkansas	4,264	77,999	2,325	84,588	5.04	92.21	2.75
Louisiana	442	[illegible]	6,396	[illegible]	0.24	96.27	3.49
Texas	20,410	640,407	43,645	704,462	2.90	90.91	6.19
Oklahoma	20,448	147,787	33,259	201,524	10.17	73.33	16.50
Intermountain	170,682	2,467	[illegible]	611,501	[illegible]	.30	54.02
Montana	98,124	-	76,584	174,708	56.16	-	43.84
Idaho	91,572	-	51,547	143,119	63.98	-	36.02
Wyoming	[illegible]	205	70,849	84,106	[illegible]	.24	84.24
Colorado	42,224	903	77,594	120,721	34.98	.75	64.27
Utah	[illegible]	-	70,544	[illegible]	26.68	-	73.34
Nevada	18,798	-	49,064	[illegible]	27.70	-	72.30
Arizona	73,112	-	21,861	94,973	76.98	-	23.02
New Mexico	8,214	1,359	20,466	30,040	27.35	4.52	68.13
Pacific Coast	881,140	920	1,412,408	2,301,464	[illegible]	.04	61.67
Washington	180,720	261	271,463	[illegible]	[illegible]	.06	60.00
Oregon	116,272	-	242,162	358,434	[illegible]	-	67.56
California	584,148	657	905,770	1,490,574	39.19	.04	60.77
Grand Total	2,600,000 2/	4,105,183 2/	4,142,005 2/	10,847,188	23.97	37.88	38.16

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State & Region	Footage W P 1/	Footage Y P 3/	Footage D F 5/	Footage Total	Per Cent W P	Per Cent Y P	Per Cent D F
North Atlantic	53,970	92,737	184,108	[illegible]	22.94	28.68	52.88
Maine	3,121	7,082	7,701	17,905	17.43	39.54	43.01
New Hampshire	7,342	6,112	[illegible]	18,210	40.54	33.56	25.80
Vermont	1,954	7,208	1,017	[illegible]	31.64	51.89	16.47
Massachusetts	39,244	44,134	107,387	190,765	20.57	23.14	56.29
Rhode Island	5,875	8,061	39,451	[illegible]	10.94	15.08	73.97
Connecticut	26,434	28,354	[illegible]	89,624	22.54	27.01	[illegible]
Mid Atlantic	322,956	649,181	666,116	1,642,235	19.67	39.05	41.28
New York	156,508	223,412	443,229	[illegible]	19.52	[illegible]	[illegible]
New Jersey	51,295	88,307	6,763	[illegible]	[illegible]	60.00	4.71
Pennsylvania	89,806	244,704	110,457	444,967	[illegible]	[illegible]	[illegible]
Delaware	1,330	12,646	22,255	36,231	3.67	[illegible]	[illegible]
Maryland	9,472	63,230	72,358	145,060	6.53	[illegible]	[illegible]
District of Columbia	8,549	16,862	56	25,467	33.57	66.21	.22
Southeast	22,742	923,158	69,890	1,015,790	2.24	90.88	6.88
West Virginia	[illegible]	50,584	7,907	65,466	[illegible]	77.27	12.08
Virginia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	26.16
North Carolina	1,574	61,230	[illegible]	[illegible]	[illegible]	[illegible]	5.00
South Carolina	187	[illegible]	8,091	[illegible]	[illegible]	[illegible]	23.98
Georgia	1,288	67,445	[illegible]	[illegible]	1.85	[illegible]	1.61
Florida	299	139,106	4,718	[illegible]	.21	[illegible]	3.27
Alabama	1,194	[illegible]	4,292	[illegible]	[illegible]	93.26	5.27
Mississippi	1,058	[illegible]	399	123,642	.86	[illegible]	[illegible]
Tennessee	2,008	147,517	680	[illegible]	[illegible]	[illegible]	[illegible]
Kentucky	[illegible]	138,104	4,461	[illegible]	1.63	[illegible]	3.06
Lake States	518,132	1,147,206	451,137	[illegible]	[illegible]	54.30	[illegible]
Ohio	46,412	346,657	33,095	[illegible]	[illegible]	77.65	7.43
Indiana	22,393	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.16
Illinois	152,600	311,914	121,182	585,576	26.06	53.27	[illegible]
Michigan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wisconsin	[illegible]	17,646	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Minnesota	[illegible]	637	[illegible]	[illegible]	[illegible]	.28	[illegible]
Mid Western	[illegible]	322,906	[illegible]	1,040,252	[illegible]	31.03	[illegible]
Missouri	40,384	206,151	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kansas	[illegible]	80,391	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iowa	116,675	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nebraska	52,326	12,646	81,473	146,445	[illegible]	[illegible]	[illegible]
South Dakota	16,067	59	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
North Dakota	20,952	42	51,789	[illegible]	[illegible]	.06	[illegible]
Southwestern	64,133	1,070,094	66,520	[illegible]	[illegible]	90.56	5.62
Arkansas	[illegible]	80,091	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Louisiana	[illegible]	[illegible]	4,290	[illegible]	[illegible]	[illegible]	[illegible]
Texas	24,870	657,582	34,306	[illegible]	[illegible]	91.77	[illegible]
Oklahoma	16,664	151,752	24,228	[illegible]	[illegible]	78.77	[illegible]
Intermountain	442,901	2,533	319,372	764,206	[illegible]	.33	41.72
Montana	158,684	-	[illegible]	[illegible]	[illegible]	-	[illegible]
Idaho	113,817	-	[illegible]	[illegible]	[illegible]	-	[illegible]
Wyoming	[illegible]	211	51,639	[illegible]	20.95	.32	[illegible]
Colorado	[illegible]	977	[illegible]	[illegible]	[illegible]	.96	[illegible]
Utah	19,866	-	[illegible]	[illegible]	[illegible]	-	[illegible]
Nevada	19,581	-	35,750	[illegible]	[illegible]	-	[illegible]
Arizona	71,975	-	15,927	87,902	[illegible]	-	[illegible]
New Mexico	7,789	1,395	16,910	[illegible]	[illegible]	[illegible]	[illegible]
Pacific Coast	908,670	944	1,080,817	[illegible]	[illegible]	.04	[illegible]
Washington	224,890	270	197,782	[illegible]	[illegible]	.06	[illegible]
Oregon	250,602	-	[illegible]	[illegible]	[illegible]	-	[illegible]
California	571,048	674	[illegible]	[illegible]	[illegible]	.06	[illegible]
Grand Total	2,713,998 2/	4,215,470 2/	3,324,316 2/	10,253,784	26.47	41.11	32.42

W P - All Softwood Lumber Produced in Western Pine Division
Y P - " " " " " Southern " "
D F - " " " " " West Coast Division

1/ Footage computed as follows:
(a) - Actual shipments to states reported by [illegible] mills (1929 and 193[illegible]) [illegible] 79 mills (1933 and 1934) to Western Pine Division and [illegible] in "Circular #410 File C-1 January 22, 1934 and Circular #[illegible] File C-1 March 12, 1935.
(b) - Percentage to each state computed from (a)
(c) - 2/then multiplied by (b) to obtain total shipments to each state
(d) - 1932 Percentage used for 1929 as only [illegible] mills reported in 1929 and did not include any shipments to California, Arizona, Florida and Georgia

2/ Estimated total shipments per year published in Docket [illegible] National Control Committee [illegible] of Lumber Code Authority March 1935. [illegible] Export as published by Foreign Commerce & Navigation.

3/ Footage computed as follows:
(a) - 1. Shipments to states reported in "Lumber Distribution and Consumption" for years 1928 and 1932, published by U. S. Department of Agriculture Forest Service
2. Actual shipments to states as reported by 1,020 mills for 11 months of 1934, to Southern Pine Association
(b) - Percentage to each computed from (a).
(c) - 2/ then multiplied by (b) (using 1928 percentages for 1929 and 1932 percentages for 1933 - usable shipment figures for 1929 and 1933 not being available)

4/ Footage computed as follows:
(a) - Rail-shipments to states reported by 148 mills in 1929, 129 mills in 1932 (4 months), unknown number in 1934, (8 months).
(b) - Rail-percentage to each state computed from (a). [illegible]
(c) - Rail-2/ minus cargo shipments then multiplied by (b) to obtain Rail Shipments to each state (using 1934 percentages for 1933 - No shipment figures available for [illegible])
(d) - Cargo - Total shipments of Forest Products to Atlantic & Gulf Ports obtained from Cargo Shipments to each state as reported by U. S. Shipping Board, Bureau of Research.
(e) - Cargo - Percentage to each state computed from (a)
(f) - Cargo - Total cargo shipments to Atlantic & Gulf Coast, as reported by Pacific Lumber Inspection Bureau & Timberman, multiplied by (b) to obtain cargo shipments to each state
(g) - Total - Total shipments to each state obtained by adding (c) Rail and (f) Cargo

IMPORTS OF SOFTWOOD LUMBER

TABLE # XLIII

IMPORTS OF FIR, SPRUCE OR WESTERN HEMLOCK LOGS, HARDWOODS, AND FIR, HEMLOCK, SPRUCE, PINE AND OTHER SOFTWOOD LUMBER

*Sources: Foreign Commerce and Navigation of the United States, Calendar years 1929, 1932, 1933, 1934
Classifications: 4018; 4104; 4105; 4106; 4107; 4112; 4109; 4117; 4110; 4119; 4120 4115
Figures for 1935 secured from Advance Official Data, Subject to Revision, of Bureau of Foreign andDomestic Commerce
All Figures in M feet BM

Species	Total Fir, Spruce of Western Hemlock Logs	Fir, Spruce or Western Hemlock Logs Canada	Total Softwood Lumber N.E.S.	Softwood Lumber Canada N.E.S.	Total Fir Lumber	Fir Lumber Canada	Total Hemlock Lumber	Hemlock Lumber Canada	Total Spruce Lumber	Spruce Lumber Canada	Spruce Lumber Russia	Total Pine Lumber	Pine Lumber Canada	Total Hardwood Lumber	Hardwood Lumber Canada
Entered following Customs Districts:															
1929 Total	86,994	86,994	1,418,449	1,352,597										81,796	78,676
Washington		86,664	79,350											321	
New York	--		209,427											1,667	
New England	--		522,799											30,180	
Massachusetts, Rhode Island & Connecticut			139,629											2,479	
Dakota			163,935											50	
Duluth & Superior			153,160											2,761	
Michigan			65,581											32,432	
1932 Total	58,933	58,933	126,819	125,704	50,185	50,185	3,153	3,153	125,698	90,580	31,410	45,928	43,085	15,276	14,325
Washington		58,047	11,127			6,558		17	1,360			743			
New York			2,767			14,520		111	24,133			2,957		817	
New England		641	65,581			233		110	68,157			13,885		12,529	
Massachusetts and Connecticut		--				10,966		1,366	14,501						
Dakota		--	3,712			6,749		610	5,406			1,519		282	
Duluth & Superior		--	12,925			4,008		736	10,008			16,568		531	
Michigan		--	8,984					2	1,948			6,396		633	
1933 Total	86,579	86,579	4,199	4,199	22,729	22,704	2,473	2,473	176,020	146,284	21,924	104,066	102,626	26,923	24,616
Washington		85,119		1,059	8,930			164	789			1,330			
New York					5,691			1,003	28,823			1,054		1,435	
New England		1,457			279			548	101,615			40,454		22,044	
Massachusetts & Rhode Island		3			3,193			391	14,632			36		755	
Dakota				1,966	2,384			118	5,494			3,439			
Duluth & Superior					1,668			24	15,170			34,052			
Michigan								75	9,438			22,168		1,134	
1934 Total	17,340	17,338	5,237	5,237	4,085	4,076	821	821	142,260	124,088	13,023	91,194	86,959	20,255	15,275
Washington	12,912			2,002	2,091			100	458			43		479	
New York				2					13,365			29		2,884	
New England	4,403			669	299			474	85,593			36,981		13,712	
Massachusetts and Rhode Island				8	207			105	13,212					604	
Dakota				2,420	826				6,729			1,039		19	
Duluth & Superior	25			110	590			14	17,307			35,592		625	
Michigan				27				106	5,529			13,252		768	
1st 9 months, 1935 Total	66 660	66,660	13,865	13,865	53,255	53,255	6,312	6,312	133,655	111,905	15,855	70,184	66,332		
Washington		61,679		4,419		14,014		80	346			89			
New York						14,234		4,219	19,672			1			
New England		4,921		1,723		2,003		82	76,742			20,390			
Massachusetts and Rhode Island				15		1,427		724	8,340						
Dakota				7,237		8,518		687	5,915			160			
Duluth & Superior		20		453		5,330		272	14,414			29,918			
Michigan				13		12		73	4,087			8,866			

*Note: Only principal customs district statistics shown.
Note: N.E.S. - Not otherwise specified.

Table XLIV

United States Exports of Specified Lumber and Timber Products to Principal Importing Countries, 1933 - 1934

	United Kingdom		Japan		China		Canada		Argentina		Italy		Belgium		Germany	
	M ft.bd.M	$1,000	M ft.bd.M	$1,000	M ft.bd.M	$1,000	M ft.bd.M	$1,000	M ft.bd.M	$1,000	M ft. bd.M	$1,000	M ft.bd.M	$1,000	M ft.bd.M	$1,000
1934																
Total	283,227	14,169	302,779	3,665	301,246	3,415	98,123	3,085	97,558	2,896	56,260	2,418	42,849	1,583	29,947	1,366
Logs-Hewn Timber	1,150	28	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods	--	--	2,265	15	2,546	17	--	--	--	--	--	--	--	--	--	--
Softwoods	1,150	28	134,833	1,495	32,411	190	42,358	578	--	--	188	4	103	8	1,281	38
Sawed Timber	26,232	1,218	135,843	1,636	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods	57	2	--	--	--	--	253	10	--	--	--	--	--	--	--	--
Softwoods	26,175	1,216	135,843	1,636	48,898	595	1,920	46	2,175	93	20,449	745	1,865	56	1,577	68
Boards, Planks and Scantlings	250,258	12,491	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods	194,307	10,411	313	78	8	2	28,860	1,601	2,524	157	8,115	402	5,553	263	1,869	186
Softwoods	55,951	2,080	26,785	397	149,528	1,729	24,530	839	92,859	2,646	27,463	1,265	35,223	1,248	25,022	1,062
Other Sawed Lumber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34	3
Box Shooks	60	1	--	--	4	1	89	4	--	--	--	--	30	2	--	--
Hardwood Flooring	5,444	430	--	--	18	2	113	7	--	--	45	2	75	6	164	9
Railroad Ties	83	1	2,740	44	67,833	879	--	--	--	--	--	--	--	--	--	--
1933																
Total	305,516	12,105	313,347	3,504	183,951	1,883	55,328	2,118	79,842	1,752	57,032	1,818	52,322	1,583	33,167	1,202
Logs-Hewn Timber	2,459	134	99,309	1,374	8,170	51	13,011	217	300	5	439	30	628	25	3,797	190
Hardwoods	2,002	111	2,350	17	7,170	46	263	8	--	--	169	20	28	2	1,449	147
Softwoods	457	23	96,959	1,357	1,000	5	12,748	209	300	5	270	10	600	23	2,348	43
Sawed Timber	31,171	1,006	174,643	1,636	37,923	327	1,272	59	910	17	22,335	610	1,846	37	1,045	32
Hardwoods	152	5	4	2	--	--	81	4	--	--	8	1	--	--	--	--
Softwoods	31,019	1,001	174,639	1,634	37,923	327	1,191	55	910	17	22,327	609	1,846	37	1,045	32
Boards, Planks and Scantlings	266,584	10,643	39,395	494	123,271	1,032	38,939	1,696	78,610	1,729	34,258	1,178	49,741	1,513	28,305	979
Hardwoods	202,425	8,844	132	25	--	--	24,782	1,240	2,602	148	9,505	316	11,599	426	1,230	98
Softwoods	64,159	1,799	39,263	469	123,271	1,032	14,157	456	76,008	1,581	24,753	862	38,142	1,087	27,075	881
Other Sawed Lumber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Box Shooks	141	3	--	--	--	--	102	3	--	--	--	--	--	--	--	--
Hardwood Flooring	5,161	319	--	--	--	--	115	5	--	--	--	--	107	8	20	1
Railroad Ties	--	--	--	--	14,587	473	1,889	138	22	1	--	--	--	--	--	--

Source: Report "Foreign Commerce and Navigation of the United States" 1933-1934 - Department of Commerce.

TABLE XLV

Softwood Exports: United States Share of World Market

Year	United States	Per Cent of Total	All other Countries	Per Cent of Total	World Total	Per Cent of Total
			(M ft. b. m.)			
1929	3,213,325	20.7	12,285,805	79.3	15,499,130	100
1930	2,268,855	19.9	11,398,150	80.1	13,667,005	100
1931	1,664,778	15.6	8,998,078	84.4	10,662,856	100
1932	1,066,100	10.8	8,801,326	89.2	9,867,426	100
1933	1,197,152	10.8	9,880,130	89.2	11,077,282	100
1934	1,386,498	12.3	9,863,893	87.7	11,250,391	100

Source: Pacific Lumber Inspection Bureau, Seattle Washington.
See Table - World Imports and Exports

TABLE NO. XLVI

RETAIL LUMBER DEALERS
NUMBER OF DEALERS AND 1934 QUESTIONNAIRES RECEIVED

Division - State	Number of Known Dealers	Dealers Reporting	Percentage of Reporting to Known
# 1 - Alabama	652	37	5.67
2 - California (North)	633	45	7.11
3 - North Carolina	197	-	-
South Carolina	362	-	-
Total for Division	559	3	0.005
4 - Florida	296	93	31.42
5 - Georgia	372	14	3.76
6 - Illinois	1,014	119	11.74
7 - Indiana	614	176	28.66
8 - Kentucky	323	40	12.38
9 - Louisiana	235	24	10.21
10 - Michigan - South	726	120	16.53
11 - Delaware	39	5	12.82
District of Columbia	19	1	5.26
Maryland	138	28	20.29
New Jersey - South	105	21	20.00
Pennsylvania - East	689	118	17.13
Total for Division	990	173	17.47
12 - Mississippi	147	8	5.44
13 - Colorado	312	96	30.77
New Mexico	115	18	15.65
Wyoming	90	17	18.89
Total for Division	517	131	25.34
14 - Nebraska	833	128	15.37
15 - New Jersey - North	474	40	8.44
16 - New York City	453	39	8.61
17 - Connecticut	176	40	22.73
Maine	167	11	6.59
Massachusetts	323	58	17.96
New Hampshire	62	7	11.29
New York (excl. NYC)	1,094	121	11.06
Pennsylvania - McKean Cty.	29	5	17.24
Rhode Island	67	7	10.45
Vermont	61	5	8.20
Total for Division	1,979	254	12.83
*18 - Minnesota	401	53	13.22
North Dakota	159	80	50.31
South Dakota	141	50	35.46
Iowa	626	126	20.13
Total for Division	1,327	309	23.29
19 - Ohio	914	241	26.37
20 - Pennsylvania - West	497	96	19.32
21 - Arkansas	254	8	3.15
Missouri	775	173	22.32
Kansas	924	127	13.74
Oklahoma	726	174	23.97
Total for Division	2,679	482	17.99
22 - Tennessee	398	26	6.53
23 - Texas	2,076	227	10.93
24 - Utah	115	12	10.43
25 - Virginia	1,091	41	3.76
26 - Idaho	229	7	3.06
Montana	309	50	16.18
Nevada	35	3	8.57
Oregon	375	17	4.53
Washington	582	59	10.14
Total for Division	1,530	136	8.89
27 - West Virginia	153	14	9.15
28 - Michigan - North	60	4	6.67
Wisconsin	910	253	27.80
Total for Division	970	257	26.50
29 - Illinois - Cook Cty.	190	32	16.84
30 - Missouri - St. Louis Cty.	105	21	20.00
31 - Arizona	89	62	69.66
32 - California - South	580	154	26.55
TOTAL	23,531	3,554	15.10

* In Division #18, North Dakota, the number of known dealers reporting is shown as 80 or 50.31 per cent. This high percentage of return for this state may be attributed to the report submitted by the Midwest Lumber Company at Minot, covering 53 yards, throughout the state. It is very probable that this lumber company was recorded as only one (1) known dealer by the Code Authority whereas we have included it as 53 separate reports. Counting this company's report as only 1 report, the number reporting in N. D. would be reduced to 28 or 17.61 per cent.

Compiled By: D. N. Burnham, C.P.A., Division of Review, NRA.

Sources: Retail Lumber Code Authority Industry Questionnaires.

TABLE NO. XLVII

RETAIL LUMBER AND BUILDING MATERIALS CODE
RECAPITULATION BY DIVISIONS OF RECLASSIFIED DATA CONTAINED IN 1933 QUESTIONNAIRES
TOTAL OF SALES IS BASE OF ALL PERCENTAGE GIVEN

Division No. & State	Dealers in Division	Dealers Reporting	Total Sales	Total Expenses Amount	Total Expenses Per Cent	Labor Amount	Labor Per Cent	Maintenance Amount	Maintenance Per Cent	Selling Amount	Selling Per Cent	Overhead Amount	Overhead Per Cent	Other Items Amount	Other Items Per Cent
One - Alabama	170	43	1,647,621	710,604	43.13	211,711	12.85	61,851	3.75	53,888	3.27	382,645	23.22	509	.03
Two - Northern California	544	114	14,067,726	4,460,190	31.90	891,471	6.10	162,584	1.12	338,317	2.31	1,467,438	10.04	1,800,380	12.33
Three - N. & S. Carolina	542	53	2,625,197	1,025,793	39.08	346,760	13.21	95,828	3.65	57,878	2.21	498,585	18.99	26,742	1.02
Four - Florida	305	94	5,395,082	1,969,117	36.50	518,302	9.61	155,303	2.88	138,768	2.58	1,067,925	19.79	88,819	1.64
Five - Georgia	387	30	1,680,439	712,347	42.39	260,003	15.46	56,099	3.34	45,518	2.72	338,406	20.14	12,320	.73
Six - Illinois	1,277	570	19,489,994	6,398,676	32.83	1,818,271	9.33	363,598	1.88	460,451	2.36	3,642,394	19.08	113,962	.59
Seven - Indiana	700	188	6,387,532	2,215,487	34.68	655,654	10.26	123,809	1.94	154,288	2.42	1,279,139	20.03	2,597	.04
Eight - Kentucky	300	72	2,993,095	1,062,630	35.50	288,641	9.64	63,441	2.12	81,591	2.73	589,699	19.70	39,258	1.31
Nine - Louisiana	166	28	1,552,628	524,042	33.75	138,036	8.89	34,891	2.25	78,107	5.03	272,818	17.57	190	.01
Ten - Michigan	801	147	5,391,107	1,960,328	36.36	574,201	10.65	122,285	2.27	89,506	1.66	1,164,173	21.51	10,163	.19
Eleven - Middle Atlantic	702	229	14,746,416	5,859,775	39.74	1,965,607	13.33	401,980	2.73	343,367	2.32	3,121,573	21.17	27,248	.19
Twelve - Mississippi	250	17	792,225	413,729	52.20	63,982	8.08	19,672	2.48	27,869	3.52	302,206	38.15	-	-
Thirteen - Col.,Wyo., & N.Mex.	500	143	5,530,755	1,969,366	35.61	552,521	9.99	147,144	2.66	188,031	3.40	1,066,544	19.28	15,126	.28
Fourteen - Nebraska	830	314	734,888	2,255,290	30.72	612,260	8.34	108,344	1.48	246,005	3.35	1,252,402	17.06	36,279	.50
Fifteen - New Jersey	370	141	11,752,687	4,681,987	39.83	1,391,824	11.84	308,099	2.62	280,643	2.39	2,682,332	22.82	19,089	.16
Sixteen - New York City	465	109	6,597,032	2,882,521	43.72	839,759	12.74	171,524	2.60	195,053	2.96	1,549,128	23.50	127,057	1.92
Seventeen - North Eastern	1,422	562	48,249,226	17,291,259	35.84	5,548,602	11.50	1,174,225	2.43	1,159,827	2.40	9,333,862	19.35	74,743	.15
Eighteen - North Western	3,031	526	30,038,323	9,019,108	30.03	2,314,242	7.70	391,205	1.30	1,493,367	4.97	4,716,150	15.70	104,144	.34
Nineteen - Ohio	1,000	317	10,565,762	4,574,983	43.30	1,331,793	12.61	297,032	2.81	243,224	2.30	2,692,490	25.48	10,444	.10
Twenty - Western Pennsylvania	600	177	6,311,605	3,045,959	48.26	931,477	14.76	201,848	3.20	158,080	2.50	1,737,139	27.52	17,415	.27
Twenty-one - South Western	2,700	557	19,494,426	6,534,311	33.52	1,550,385	7.95	304,476	1.56	979,629	5.02	3,631,841	18.64	67,980	.35
Twenty-two - Tennessee	385	34	1,416,702	509,129	35.94	158,884	11.23	43,403	3.06	39,448	2.79	267,239	18.87	155	.01
Twenty-three - Texas	1,400	186	10,187,350	3,615,504	35.51	842,148	8.27	142,410	1.40	447,504	4.39	2,137,990	20.98	45,452	.45
Twenty-four - Utah	108	40	2,188,988	737,971	33.71	179,410	8.20	45,108	2.06	121,860	5.57	390,177	17.82	1,416	.06
Twenty-five - Virginia	230	61	5,470,064	2,195,673	40.14	724,291	13.24	156,405	2.85	117,197	2.14	1,160,636	21.22	37,144	.68
Twenty-six - Western	959	134	5,844,737	1,899,198	32.49	518,627	8.87	125,009	2.14	223,130	3.82	1,024,270	17.52	8,162	.14
Twenty-seven - W. Virginia	180	37	2,351,791	965,602	41.07	272,390	11.58	51,124	2.17	87,619	3.72	523,653	22.27	30,816	1.31
Twenty-eight - Wisconsin	940	448	16,204,115	5,220,339	32.22	1,520,637	9.38	379,496	2.34	393,940	2.43	2,853,954	17.61	72,312	.44
Twenty-nine - Chicago	176	43	3,065,980	1,339,569	43.76	404,356	13.19	94,025	3.07	94,368	3.08	742,819	24.23	4,001	.13
Thirty - St. Louis	42	26	2,633,808	975,790	37.05	332,212	12.61	47,230	1.79	89,552	3.40	495,653	18.82	11,143	.42
Thirty-one - Arizona	86	31	1,686,876	626,150	37.12	177,596	10.53	47,098	2.79	57,006	3.38	344,391	20.41	59	-
Thirty-two - California S.	469	220	17,402,332	6,083,630	34.96	2,327,788	13.36	432,134	2.48	385,838	2.22	2,895,205	16.64	42,665	.24
Totals	22,129	5,731	291,639,759	103,936,057	35.64	30,263,841	10.37	6,326,680	2.17	8,870,870	3.04	55,624,876	19.08	2,847,790	.98

Compiled By: D. N. Burnham, C.P.A.,
Division of Review, NRA.,

Source: Industry Questionnaires.

TABLE NO. XLVIII

RETAIL LUMBER DEALERS

RECAPITULATION

EXPENSES TO NET SALES DOLLAR

YEAR 1934

KNOWN DEALERS 23,531 - DEALERS REPORTING 3,554

(See Exhibit "a")

	Sales 000 Omitted	Percentage of Each to Net Sales						
		Gross Profit	Rework Mill Exp.	Handling Delivery Expense	Selling Admin. Expense	Interest Bad Debts Expense	Total Trade Expenses	Profit Loss -
Industry	$ 166,763	27.74	.75	7.12	17.08	3.27	28.22	.48-
Division - State								
1 - Alabama	1,409	35.01	3.86	8.04	17.17	3.20	32.27	2.84
2 - No. Ca & if.	2,426	27.43	1.03	7.11	14.78	3.18	26.10	1.33
3 - Carolinas	107	37.58	5.90	7.82	20.52	1.18	35.42	2.16
4 - Florida	6,068	29.36	1.08	6.77	14.58	3.17	25.60	3.76
5 - Georgia	1,786	28.31	2.24	7.52	13.82	1.93	25.51	2.80
6 - Illinois	3,872	27.46	.12	7.18	16.89	3.22	27.41	.05
7 - Indiana	6,307	27.78	.53	6.66	17.63	3.36	28.18	.40-
8 - Kentucky	1,843	31.08	.75	6.99	19.48	3.15	30.37	.71
9 - Louisiana	1,630	27.18	.11	7.17	16.73	1.55	25.56	1.62
10 - So. Mich.	6,099	27.99	.69	7.97	16.50	3.18	28.34	.35-
11 - Total	12,883	28.04	.63	8.44	16.80	3.58	29.45	1.41-
Delaware	548	28.87	-	7.27	14.98	1.24	23.49	5.38
D. of C.	41	21.33	-	5.40	8.62	1.28	15.30	6.03
Maryland	1,827	27.66	.91	6.95	15.83	2.88	26.57	1.09
So. N. J.	1,283	28.01	.84	8.49	22.05	10.31	41.69	13.68-
East Penna.	9,030	28.22	.60	8.87	16.54	2.95	28.96	.74-
12 - Mississippi	551	30.78	.05	7.43	21.25	5.03	33.76	2.98-
13 - Total	5,073	25.87	.10	5.35	16.29	2.70	24.44	1.43
Colorado	3,436	24.67	.12	5.81	15.82	2.27	24.02	.65
New Mexico	813	25.96	.12	4.02	16.01	2.58	22.73	3.23
Wyoming	824	30.81	-	4.74	18.51	4.61	27.86	2.95
14 - Nebraska	3,785	23.28	.21	5.98	15.99	2.18	24.16	.88-
15 - No. N. J.	3,111	32.44	.39	9.95	21.23	3.64	35.21	2.97-
16 - N. Y. City	3,915	31.64	.65	11.13	19.00	2.70	33.48	1.84-
17 - Total	23,173	29.21	.98	8.60	17.54	3.71	30.83	1.62-
Conn.	4,986	29.40	.05	8.97	15.85	4.38	29.25	.15
Maine	661	30.26	2.51	5.64	16.16	2.67	26.98	3.28
Mass.	6,350	29.21	1.21	9.75	17.51	3.16	31.63	2.42-
N. H.	405	32.70	5.21	10.14	14.81	3.42	33.58	.88-
N. Y. State	9,350	28.46	.88	7.83	18.04	3.46	30.21	1.75-
Pa. 3 C'ties.	183	34.59	8.63	5.97	10.00	4.67	30.27	4.32
R. I.	884	31.49	.65	9.84	24.30	8.29	43.08	11.59-
Vermont	354	31.62	1.67	4.88	21.31	.98	28.84	2.78
18 - Total	8,657	24.27	-	6.01	14.24	2.02	22.27	2.00
Iowa	3,690	24.10	-	7.40	11.85	1.93	21.18	2.92
Minn.	2,538	24.87	-	6.86	13.50	2.67	23.03	1.84
North Dak.	1,382	25.06	-	7.72	16.29	.94	22.55	2.51
So. Dak.	1,048	22.37	-	2.59	19.09	2.23	23.91	1.54-
19 - Ohio	10,590	30.66	1.06	7.68	18.65	3.90	31.29	.63-
20 - Penna. West.	4,269	29.62	.96	7.57	19.32	4.08	31.93	2.31-
21 - Total	13,575	25.89	.12	4.13	17.39	2.89	24.53	1.45
Arkansas	167	28.02	-	8.63	14.44	4.53	27.60	.42
Kansas	3,014	27.39	.01	3.99	18.79	3.20	25.99	1.40
Missouri	5,040	25.64	.32	4.95	16.92	2.26	24.45	1.19
Oklahoma	5,354	25.23	-	3.31	17.13	3.27	23.71	1.52
22 - Tennessee	1,276	30.45	.89	6.20	20.20	3.23	30.52	.07-
23 - Texas	6,914	27.59	.18	2.28	19.75	3.39	25.60	1.99
24 - Utah	551	24.52	.42	5.87	13.79	4.94	25.02	.50-
25 - Virginia	3,293	27.25	2.16	7.05	15.22	2.75	27.18	07
26 - Total	5,007	29.81	.38	7.48	16.36	4.33	28.55	1.26
Idaho	281	27.06	-	4.63	13.45	9.95	28.03	.97-
Montana	2,079	29.32	.30	6.57	15.26	4.90	27.03	2.29
Nevada	96	27.04	-	5.30	21.05	2.39	28.74	1.70-
Oregon	633	32.15	.02	6.34	20.33	2.53	29.22	2.83
Washington	1,917	30.10	.64	9.38	16.44	3.57	30.03	.07
27 - West Va.	1,001	27.61	.76	6.75	14.99	4.56	27.06	.55
28 - Total	9,142	24.56	.21	6.68	14.29	3.03	24.21	.35
Mich. No. Pen.	211	26.16	-	8.09	12.18	2.11	22.38	3.78
Wisconsin	8,932	24.52	.22	6.65	14.34	3.05	24.26	.26
29 - Chicago Area	3,510	29.65	.24	8.17	20.49	3.46	32.36	2.71-
30 - St. Louis County	1,855	31.07	1.84	9.52	21.50	2.08	34.94	3.87-
31 - Arizona	2,536	27.97	.01	7.74	17.31	3.13	28.19	.22-
32 - So. Calif.	10,548	23.19	2.39	7.67	16.33	3.56	29.95	6.76-

Compiled By: D. N. Burnham, C.P.A.,
Division of Review, NRA,

Source: Industry Questionnaires.

TABLE [illegible]

TAIL LUM[illegible] DEALE[illegible]
RECAPITU[illegible]ION
NORAL COST [illegible]TAILS
YEAR 1944

KY[illegible] [illegible] [illegible] DEALERS PER[illegible]ING [illegible] 4
(See Table No. [illegible])

	Sales Volume 000 Omit	Gross Profit	Percentage of Each to Total Cost of Goods Sold: Rework	Handling Delivery Expense	Selling & Ad[illegible] Expense	[illegible]	[illegible]	P[illegible]
Industry	$ 166,7[illegible]	38.39	1.04	9.85	[illegible].64	[illegible]	[illegible].6	.6[illegible]
Division - State								
1 - Alabama	1,409	33.87	[illegible].93	12.37	26.43	[illegible]	[illegible].6[illegible]	4.6[illegible]
2 - No. Calif	2,426	37.80	1.41	9.80	20.38	4.38	3[illegible].97	1.63
3 - Carolinas	107	60.21	9.45	16.53	[illegible].27	1.89	56.74	3.47
4 - Florida	6,068	41.56	1.53	9.69	[illegible].64	[illegible]	[illegible].65	5.31
5 - Georgia	1,780	39.49	[illegible].13	10.49	19.28	[illegible]	[illegible].9	7.90
6 - Illinois	3,871	37.86	.17	9.89	[illegible].9[illegible]	[illegible]	7.[illegible]	.08
7 - Indiana	6,307	38.47	.73	9.22	24.42	[illegible]	[illegible]	.55
8 - Kentucky	1,842	44.11	1.09	10.14	28.27	[illegible]	[illegible]	.4
9 - Louisiana	1,636	[illegible].32	.15	9.84	[illegible].97	[illegible]	[illegible]	[illegible]
10 - So. Mich	6,[illegible]	38.87	.96	11.06	[illegible].93	[illegible]	[illegible]	[illegible]
11 - Total	12,8[illegible]	[illegible].97	.88	11.72	[illegible].35	[illegible]	40.92	1.[illegible]
Delaware	548	40.58	-	10.21	21.06	[illegible].7[illegible]	33.02	7.56
Dist. of Col.	193	27.12	-	6.87	10.95	1.63	19.45	7.67
Maryland	1,827	38.23	1.25	9.61	21.88	3.98	36.72	1.51
So. N. J.	1,282	38.91	1.16	11.79	30.65	14.32	57.92	19.01-
E. Penna.	9,030	39.31	.84	12.35	23.04	4.11	40.34	1.03-
12 - Miss	551	[illegible].46	.08	10.73	30.70	7.27	48.78	4.32-
13 - Total	5,6[illegible]2	34.90	.14	7.22	21.97	3.64	32.97	1.93
Colo.	3,435	32.74	.16	7.72	20.99	3.02	31.89	.85
N. Mex	813	35.05	.16	5.43	21.63	3.48	30.70	4.36
Wyo.	823	44.54	-	6.85	26.75	6.66	40.26	4.28
14 - Neb.	3,784	30.35	.01	7.80	20.84	2.84	31.49	1.14
15 - No. N. J.	3,111	48.01	.57	14.73	31.42	5.39	52.11	4.[illegible]
16 - N. Y. City	3,914	46.29	.96	16.89	27.80	[illegible].9	[illegible].9[illegible]	1.[illegible]
17 Total	23,173	41.25	1.38	12.15	24.78	[illegible].84	[illegible]	[illegible]
Conn.	4,986	41.64	.07	12.71	22.45	[illegible].[illegible]	[illegible].[illegible]	[illegible]
Maine	661	43.40	3.60	8.09	23.18	[illegible].6[illegible]	8.6[illegible]	[illegible]
Mass.	[illegible],349	41.26	1.71	13.78	24.73	[illegible].[illegible]	[illegible].[illegible]	[illegible]
N. H.	405	48.69	7.73	15.08	28.[illegible]	[illegible]	[illegible]	[illegible]
N. Y. State	9,349	39.78	1.23	10.95	25.21	[illegible].[illegible]8	[illegible].[illegible]	[illegible]
Penna. Part	183	52.88	13.19	9.12	16.82	[illegible].14	46.[illegible]7	[illegible]
R. I.	883	45.97	.95	14.37	35.47	12.09	62.88	16.[illegible]7
Vermont	353	46.24	2.45	7.13	[illegible].17	[illegible].43	42.[illegible]7	[illegible]
18 - Total	8,657	32.05	-	7.93	18.80	[illegible]	[illegible]	[illegible]
Iowa	3,689	31.75	-	9.74	18.62	[illegible]	[illegible]	[illegible]
Minn.	2,538	33.11	-	9.14	17.96	[illegible]	[illegible]	[illegible]
No. Dak.	1,381	33.43	-	4.43	24.40	[illegible].[illegible]	[illegible]	[illegible]
So. Dak.	1,047	28.81	-	3.33	24.59	[illegible]	[illegible]	[illegible]
19 - Ohio	10,590	44.21	1.53	11.07	26.69	[illegible]	[illegible]	[illegible]
20 - W. Penna.	4,268	42.08	1.36	10.76	27.45	[illegible]	[illegible]	[illegible]
21 Total	13,574	34.94	.16	5.58	23.46	[illegible].91	[illegible]	[illegible]
Ark.	167	38.92	-	11.99	20.06	6.29	38.34	[illegible]
Kans.	3,013	37.74	.01	5.50	25.87	4.41	35.79	1.95
Mo.	5,039	34.47	.43	6.65	22.75	3.04	32.87	1.60
Okla.	5,354	33.74	-	4.42	22.91	4.37	31.70	2.04
22 - Tenn.	1,275	43.78	1.28	8.91	29.04	4.64	43.87	.[illegible]9
23 - Texas	6,914	38.10	.25	3.14	27.27	4.69	35.35	2.75
24 - Utah	551	32.48	.55	7.78	18.27	6.44	33.14	.66-
25 - Va.	3,293	37.46	2.97	9.69	20.93	3.78	37.37	.09
26 - Total	5,006	42.46	.54	10.66	23.31	[illegible].16	40.67	1.79
Idaho	280	37.10	-	6.35	18.44	13.64	38.43	1.33-
Mont.	2,078	41.48	.44	9.29	21.59	6.93	38.25	3.23
Nevada	96	37.03	-	7.27	28.84	3.28	39.39	2.36-
Oregon	633	47.38	.03	9.34	29.95	[illegible].74	43.06	4.32
Wash.	1,917	43.06	.92	13.41	23.52	[illegible].11	42.96	.10
27 - W. Va.	1,001	38.14	1.05	9.33	20.71	6.30	37.39	.75
28 - Total	9,142	32.56	.28	8.86	18.94	4.02	32.10	.46
No. Mich.	210	35.43	-	10.95	16.49	2.86	30.30	5.13
Wisc.	8,931	32.49	.29	8.81	19.00	4.05	32.15	.34
29 - Cook Cty, Ill.	3,509	42.15	.35	11.61	29.13	4.92	46.01	3.86-
30 - St. Louis Cty.	1,855	45.07	2.66	[illegible].81	31.19	[illegible].02	50.68	5.61-
31 - Arizona	2,535	38.84	.01	10.75	24.03	[illegible].36	39.14	.30-
32 - So. Calif.	10,547	30.20	3.12	9.98	21.26	[illegible].34	39.00	8.2[illegible]

Compiled [illegible] D. N. Burnham, C.P.A.,
Division of Review, NRA

Source: Industry Questionnaires.

TABLE NO. L

RETAIL LUMBER DEALERS
RECAPITULATION FOR INDUSTRY
OPERATION RESULTS 1934
KNOWN DEALERS 23,531 - DEALERS REPORTING 3,554

		Percentage			
A. SALES					
1.	Lumber, building materials	61.94	$ 103,296,326		
2.	Direct car-lot shipments, lumber and building materials	3.12	5,206,990		
3.	Stock millwork	3.86	6,439,841		
4.	Special manufactured millwork	3.16	5,265,631		
5.	Builders' supplies (see lumber code, art, II, par. 1)	8.63	14,724,577		
6.	Direct car-lot shipments builders' supplies	1.09	1,816,769		
7.	Retail store items and building specialties	6.34	10,573,159		
8.	Coal and other fuels	7.96	13,273,603		
9.	Feed, seed, grain, fertilizer	1.73	2,893,715		
Other Items					
10.		3.13	5,214,994		
11.					
12.	Total sales	101.16	168,705,605		
13.	Discounts and allowances made	1.16	1,941,833		
14.	Net sales (12 minus 13)	100.00	166,763,772		
		Percentage to Sales			Percentage to Cost of Sales
B. COST OF GOODS SOLD					
15.	Inventory - Beginning January 1, 1934, or earlier		$ 62,075,916		
16.	Purchase of all items 1 to 11		114,792,607		
17.	Manufactured special millwork (item C1-41)		3,190,864		
18.	Total 15-16-17		180,059,387		
19.	Inventory - Closing Dec. 31, 1934, or earlier		59,555,677		
20.	Cost of goods sold (18 minus 19)	72.26	120,503,710		
21.	Gross profit (item A-14 minus B-20	27.74	46,260,062		38.39
22.	Total saw and planing mill expense (C2)	.75	1,247,347		1.04
23.	Total handling and delivery expense (D)	7.12	11,673,841		9.85
24.	Total selling-administrative expense (E)	17.08	28,490,608		23.64
25.	Total other deductions (F)	3.27	5,454,156		4.53
26.	Total mode expense (22 to 25)	28.22	47,065,952		39.06
27.	Depreciation	1.60	3,001,339		
28.	Officers' life-insurance premiums	.13	219,361		
29.	Other expense not included in other items	.37	622,262		
30.	Total (26 to 29)	30.52	50,908,914		
31.	Net profit (21 less 30)	- 2.79	4,648,852-		
32.	Other income		1,723,935		
33.	Interest and discount earned, lost accounts recovered, etc.		2,492,431		
34.	Net profit for period per the books	- .26	432,486-		
C1. MILL FOR MANUFACTURE OF SPECIAL MILLWORK					
35.	Superintendent and foreman wages		$	$	
36.	Mill labor - direct and indirect				
37.	Supplies				
38.	Maintenance and repairs - mill only				
39.	Heat, light, and power - mill only				
40.	Mill expense, other - not including taxes, insurance, depreciation, and rent				
41.	Total mill costs (include as B-17)			3,190,864	1.91
C2. SAW AND PLANING MILL (incidental remanufacture of lumber)					
42.	Labor	1.67	$ 953,751		.57
43.	Supplies and incidental expense	.56	293,596		.18
44.	Total saw and planing mill expense (transfer total to line 22)	2.45		1,247,347	.75
D. HANDLING AND DELIVERY EXPENSE					
45.	Yard labor	11.58	$ 5,895,273		3.53
46.	Yard maintenance and repairs	.75	380,467		.23
47.	Yard supplies	.23	118,080		.07
48.	Demurrage				
49.	Truck labor	4.97	2,532,595		1.52
50.	Truck and garage maintenance and repairs	1.97	1,002,582		.60
51.	Truck gas and oil	2.26	1,150,972		.69
52.	Hired trucks	.70	356,652		.22
53.	Stable labor	.17	85,201		.05
54.	Stable-wagon maintenance and repairs				
55.	Feed and supplies				
56.	Other items (specify)	.69	350,019		.21
57.					
58.	Total handling and delivery expense (transfer total to line 23)	23.32		11,673,841	7.12
E. SELLING AND ADMINISTRATIVE EXPENSE					
59.	Salesmen's salaries, commission, and travel	7.33	$ 3,731,810		2.24
60.	Advertising	1.70	864,836		.52
61.	Officers' or partners' salaries	15.13	7,704,276		4.62
62.	Office wages	10.90	5,547,637		3.33
63.	Postage, stationery, and supplies	1.41	717,613		.42
64.	Telegraph and telephone	1.42	722,051		.43
65.	Heat, light and water (for yard and office)	.91	463,453		.28
66.	Accounting fees	.26	141,265		.08
67.	Legal fees	.50	254,562		.15
68.	Dues and subscriptions	.57	287,736		.17
69.	Collection expense	.32	161,928		.10
70.	Donations	.19	99,147		.06
71.	Travel and promotion other than E-59	.56	287,044		.17
72.	Office maintenance and repairs	.38	193,160		.12
73.	Payments to Code Authority	.90	457,553		.27
74.	Insurance (all kinds except life)	3.49	1,775,039		1.06
75.	Taxes (except Federal income tax)	5.52	2,808,969		1.68
76.	Rent	2.55	1,296,309		.76
77.	Other (specify)	1.91	974,178		.58
78.					
79.	Total (transfer to line 24)	55.97		$ 28,490,608	17.08
F. OTHER DEDUCTIONS					
80.	Interest paid (not interest on investment)	3.43	$ 1,747,643		1.05
81.	Bad debts	7.28	3,706,513		2.22
82.	Total other deductions (transfer to line 25)	10.71		$ 5,454,156	3.27

Compiled By: D. N. Burnham, C.P.A.
Division of Review, NRA,

Source: Industry Questionnaires.

TABLE LI

Lumber Cost at Chicago, Illinois

Code Period January to March, 1934

	Douglas Fir	Southern Pine	Western Pine	Oak
Shipping Weight per M Ft.	2,800#	3,000#	2,300#	4,300#
Freight rate per 100 pounds	$ .72	$ .38	$ .51	$ .295
Costs per M. B. M.				
Stumpage	$ 2.42	$ 4.31	$ 2.11	$ 6.31
Logging and Milling				
Labor	5.11	7.58	6.35	9.27
Other Costs	6.58	6.13	7.77	6.91
Shipping and Selling				
Labor	1.06	1.61	1.90	2.35
Other Costs	1.21	1.07	1.95	1.53
Overhead and Administrative				
Officers and Owners Pay	.62	1.05	.76)	4.11
Other Costs	1.80	3.50	2.60)	
Total Mill Costs 1/	$18.80	$25.25	$23.44	$30.48
Freight	20.16	11.40	11.73	12.75
Cost to Retailer	$38.96	$36.65	$35.17	$43.23
Retail Costs 2/				
Labor	6.89	6.48	6.22	7.64
Officers & Owners Pay	2.71	2.55	2.44	3.01
Other Costs	8.13	7.65	7.34	9.03
Total Cost to Consumer	$56.69	$53.33	$51.17	$62.91
RECAPITULATION				
Stumpage	2.42	4.31	2.11	6.31
Logging and Milling	11.69	13.71	14.12	16.18
Selling and Administrative	4.69	7.23	7.21	7.99
Freight	20.16	11.40	11.73	12.75
Retailers Costs	17.73	16.68	16.00	19.68
Cost to Consumer	$56.69	$53.33	$51.17	$62.91

1/ Total mill costs derived from Industry cost questionnaires.

9813 2/ Retail costs derived from Industry cost questionnaires

TABLE LII

Lumber Cost at New York, New York
Code Period January to March 1934

	Douglas Fir Water	Douglas Fir	Southern Pine	Western Pine	Oak
Shipping Weight per M Ft.	3,100#	2,800#	3,000#	2,300#	4,300#
Freight Rate per 100 pounds		$ .87	$ .37	$ .73	$ .41½
Costs per M. B. M.					
Stumpage	$ 2.42	2.42	4.31	2.11	6.31
Logging and Milling					
Labor	5.11	5.11	7.58	6.35	9.27
Other Costs	6.58	6.58	6.13	7.77	6.91
Shipping and Selling					
Labor	1.06	1.06	1.61	1.90	2.35
Other Costs	1.21	1.21	1.07	1.95	1.53
Overhead and Administrative					
Officers and Owners Pay	.62	.62	1.05	.76)	4.11
Other Costs	1.80	1.80	3.50	2.60)	
Total Mill Cost 1/	$18.80	$18.80	$25.25	$23.44	$30.48
Freight	10.20	24.36	11.10	16.79	17.75
Cost to Retailer	$29.00	$43.16	$36.35	$40.23	$48.33
Retail Costs 2/					
Labor	6.51	9.69	18.16	9.08	10.83
Officers & Owners Pay	1.77	2.64	2.22	2.46	2.95
Other Costs	5.96	8.88	7.48	8.28	9.94
Total Cost to Consumer	$43.24	$64.37	$54.21	$60.00	$71.95

RECAPITULATION

Stumpage	$ 2.42	$ 2.42	$ 4.31	$ 2.11	$ 6.31
Logging and Milling	11.69	11.69	13.71	14.12	16.18
Selling and Administrative	4.69	4.69	7.23	7.21	7.99
Freight	10.20	24.36	11.10	16.79	17.75
Retailers Costs	14.24	21.21	17.86	19.77	23.72
Cost to Consumer	$43.24	$64.37	$54.21	$60.00	$71.95

Water Rate 83% of $12.00+25¢

1/ Total mill costs derived from Industry cost questionnaires.
2/ Retail costs derived from Industry cost questionnaires.

TABLE LIII

STOCKS, SHIPMENTS AND PRODUCTION OF SOFTWOOD LUMBER
1923 - 1935

Total Stocks, Shipments and Production of Softwood Lumber in Millions of Feet and Elimination of Seasonal Fluctuations to Show Secular (long time) Trend

	Stock on Hand At Beginning of Period		Trend of Stocks	Shipments During Period		Trend of Shipments	Production During Period		Trend of Production
1923	6,600	÷ 1.019	= 6,470	30,004	÷ 4	= 7,501	30,904	÷ 4	= 7,726
1924	7,500	1.019	7,360	29,106	4	7,276	29,406	4	7,352
1925	7,800	1.019	7,650	31,010	4	7,752	31,710	4	7,928
1926	8,500	1.019	8,340	30,169	4	7,542	30,469	4	7,617
1927	8,800	1.019	8,630	27,942	4	6,986	28,442	4	7,110
1928	9,300	1.019	9,120	29,367	4	7,342	28,345	4	7,086
1929 1st Quarter	8,416	1.019	8,259	7,107	.908	7,827	6,839	.863	7,925
2nd "	8,148	.992	8,214	8,121	1.074	7,561	8,116	1.088	7,460
3rd "	8,143	.996	8,176	7,450	1.082	6,885	7,968	1.087	7,330
4th "	8,661	.993	8,722	6,248	.936	6,675	7,020	.962	7,297
1930 1st Quarter	9,433	1.019	9,257	5,586	.908	6,152	5,586	.863	6,472
2nd "	9,433	.992	9,509	5,791	1.074	5,392	6,388	1.088	5,871
3rd "	10,030	.996	10,070	5,092	1.082	4,706	5,130	1.087	4,719
4th "	10,068	.993	10,139	4,333	.936	4,629	4,227	.962	4,394
1931 1st Quarter	9,962	1.019	9,776	4,067	.908	4,479	3,515	.863	4,073
2nd "	9,410	.992	9,486	4,300	1.074	4,004	4,238	1.088	3,895
3rd "	9,348	.996	9,386	3,921	1.082	3,624	3,669	1.087	3,320
4th "	9,036	.993	9,100	2,879	.936	3,076	2,561	.962	2,662
1932 1st Quarter	8,718	1.019	8,555	2,701	.908	2,975	1,980	.863	2,294
2nd "	7,997	.992	8,061	2,720	1.074	2,533	2,333	1.088	2,144
3rd "	7,610	.996	7,641	2,848	1.082	2,632	2,307	1.087	2,122
4th "	7,069	.993	7,119	2,516	.936	2,688	2,222	.962	2,310
1933 1st Quarter	6,775	1.019	6,649	2,216	.908	2,441	1,824	.863	2,114
2nd "	6,383	.992	6,434	3,450	1.074	3,212	2,762	1.088	2,537
3rd "	5,715	.996	5,738	3,997	1.082	3,694	3,927	1.087	3,613
4th "	5,645	.993	5,685	3,133	.936	3,347	3,176	.962	3,301
1934 1st Quarter	5,688	1.019	5,582	3,116	.908	3,432	3,323	.863	3,851
2nd "	5,895	.992	5,943	3,332	1.074	3,102	3,656	1.088	3,359
3rd "	6,218	.996	6,243	3,323	1.082	3,071	3,176	1.087	2,922
4th "	6,071	.993	6,114	2,827	.936	3,020	2,485	.962	2,583
1935 1st Quarter	5,729	1.019	5,622	2,943	.908	3,241	2,649	.863	3,070
2nd "	5,435	.992	5,479	3,545*	1.074	3,300	3,156*	1.088	2,901
3rd "	5,046*	.996	5,066	3,679*	1.082	3,400			
4th "				3,182*	.936	3,400			

* Anticipated

Note: Quarterly figures are not available prior to 1929.

TABLE LIV

Hours of Labor: Number of Establishments and Number of Wage Earners by Prevailing Hours of Labor per Week, 1929.

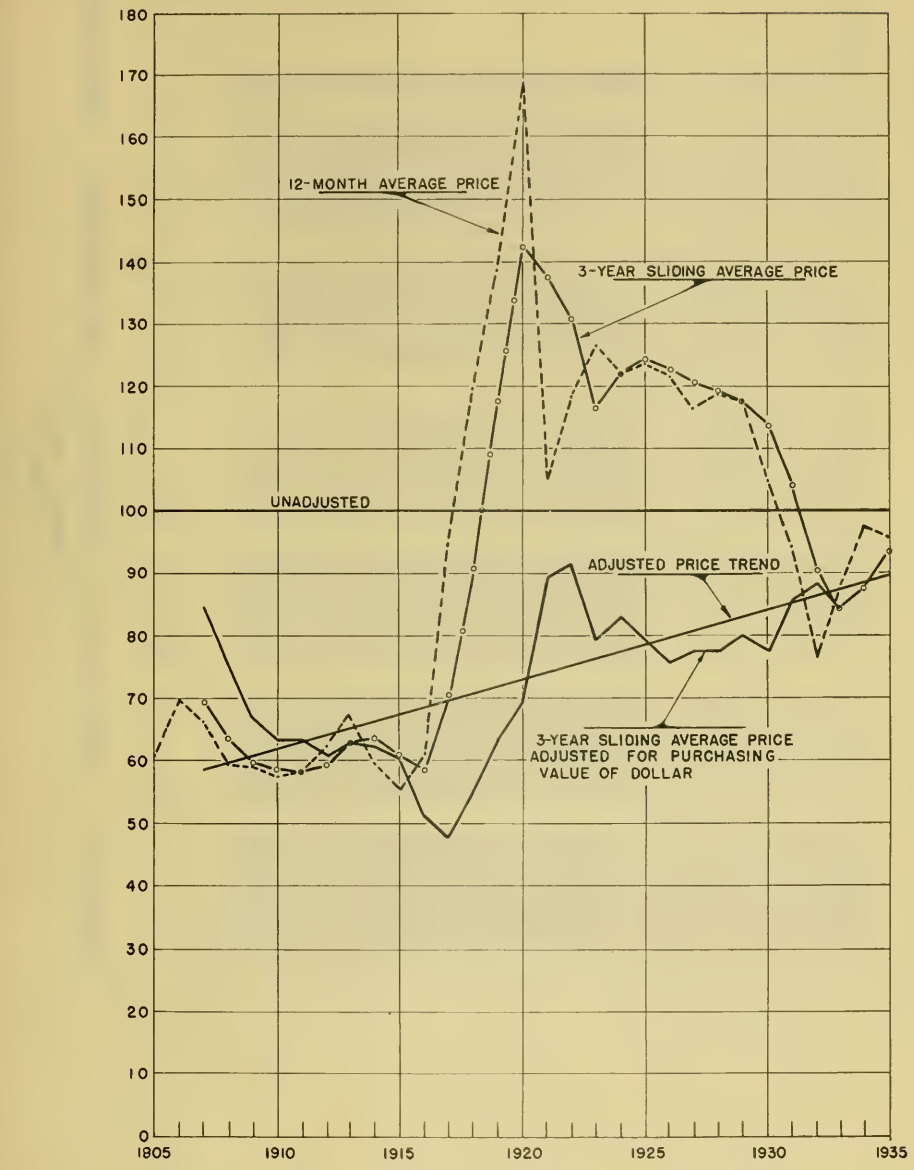
	Sawmills	Per Cent of Total	Millwork	Per Cent of Total	Sawmills and Millwork	Per Cent of Total
(Total Establishments	12,915	100.0	4,849	100.0	17,764	100.0
(Total Wage Earners	419,084	100.0	90,134	100.0	509,218	100.0
(Establishments with (hours not reported	6,333	49.0	560	11.6	6,893	38.8
(Number of wage earners	31,514	7.5	1,442	1.6	32,956	6.5
(40 hours and under (Number of establishments	350	2.7	300	6.2	650	3.6
(Number of wage earners	15,874	3.8	4,787	5.3	20,661	4.1
(Over 40 hours but (under 45 hours (Number of establishments	75	0.6	1,098	22.6	1,173	6.6
(Number of wage earners	4,635	1.1	17,984	20.0	22,619	4.4
(45 hours to 48 hours (inclusive (Number of establishments	1,803	14.0	680	14.0	2,483	14.0
(Number of wage earners	95,068	22.7	16,637	18.5	111,705	21.9
(Over 48 hours but not (over 54 hours (Number of establishments	1,391	10.8	1,377	28.4	2,768	15.6
(Number of wage earners	48,125	11.5	27,980	31.0	76,105	14.9
(Over 54 hours (Number of establishments	2,963	22.9	834	17.2	3,797	21.4
(Number of Wage earners	223,868	53.4	21,304	23.6	245,172	48.2

Source: Census of Manufactures, 1929; Percentages, and sums for Sawmills and Millwork, computed from Census figures shown.

PRICE TREND

SOUTHERN PINE ROOFERS 3/4" x 5 1/2", #4

BY YEARS, 1905-1935



SOURCE: "NEW YORK LUMBER TRADE JOURNAL"

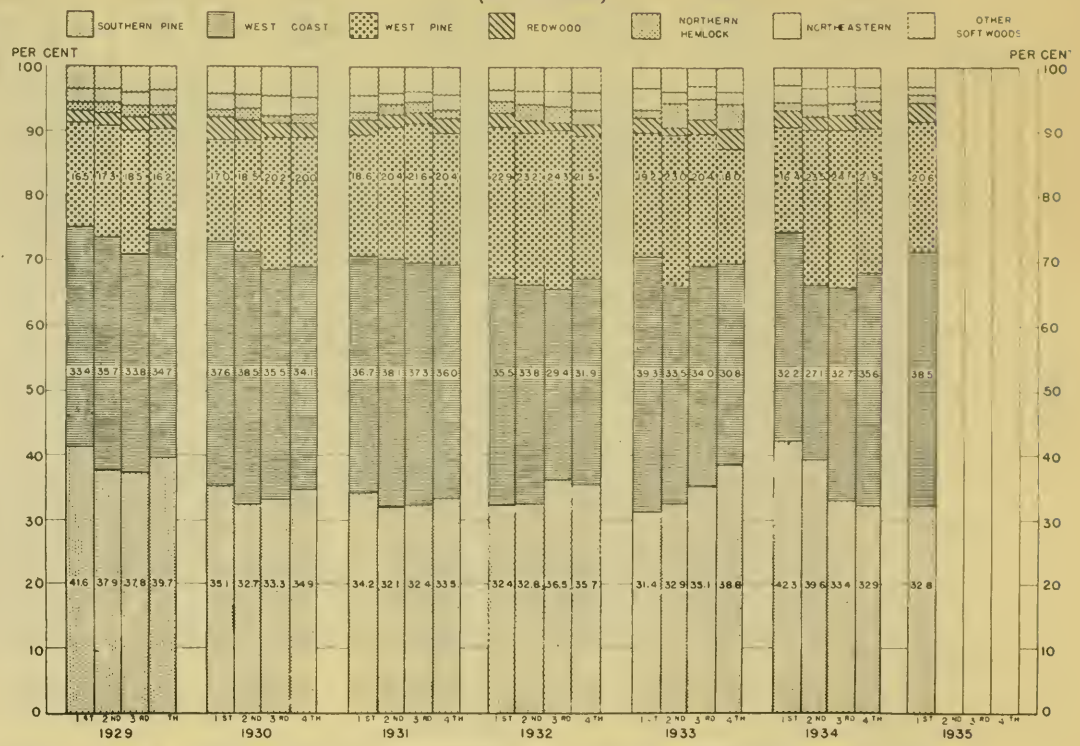
NRA
DIVISION OF REVIEW
STATISTICS SECTION
NO. 495

EXHIBIT C

LUMBER INDUSTRY

QUARTERLY SOFTWOOD SHIPMENTS, BY REGIONS, 1929-1935

(IN PER CENT)



SOURCE LUMBER CODE AUTHORITY, DOCKET NO. 5

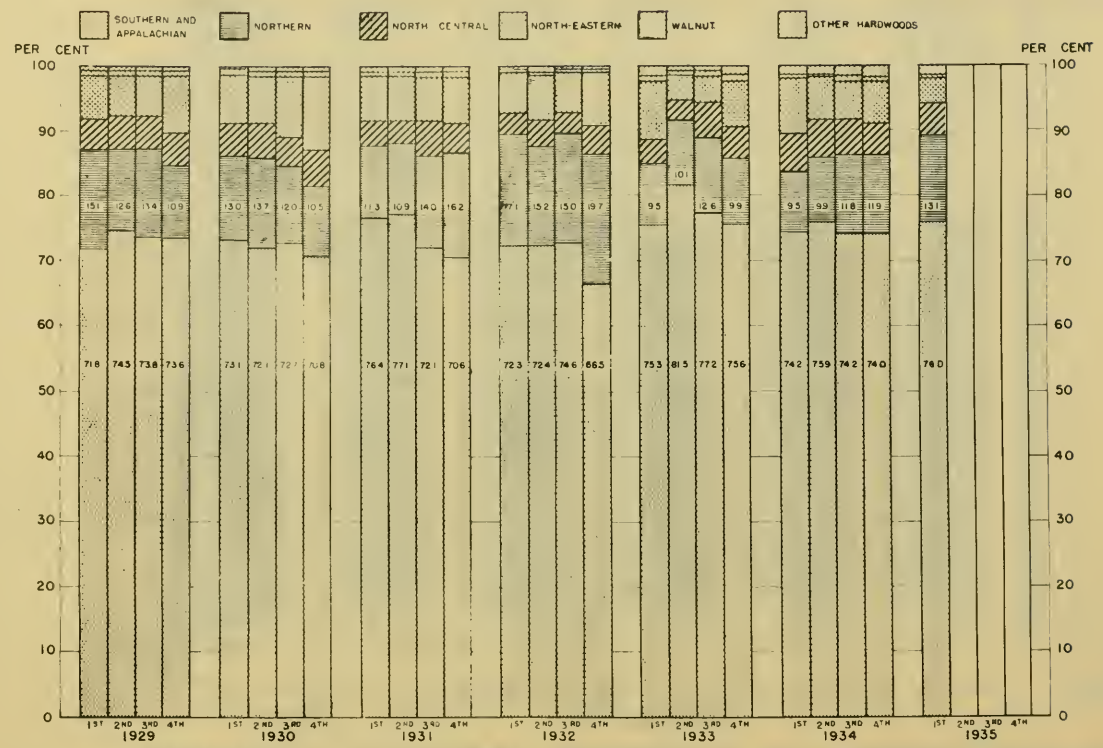
9813

N R A
DIVISION OF REVIEW
STATISTICS SECTION
NO 333

LUMBER INDUSTRY

QUARTERLY HARDWOOD SHIPMENTS, BY REGIONS, 1929-1935

(IN PER CENT)



SOURCE LUMBER CODE AUTHORITY DOCKET NO 5

98.10

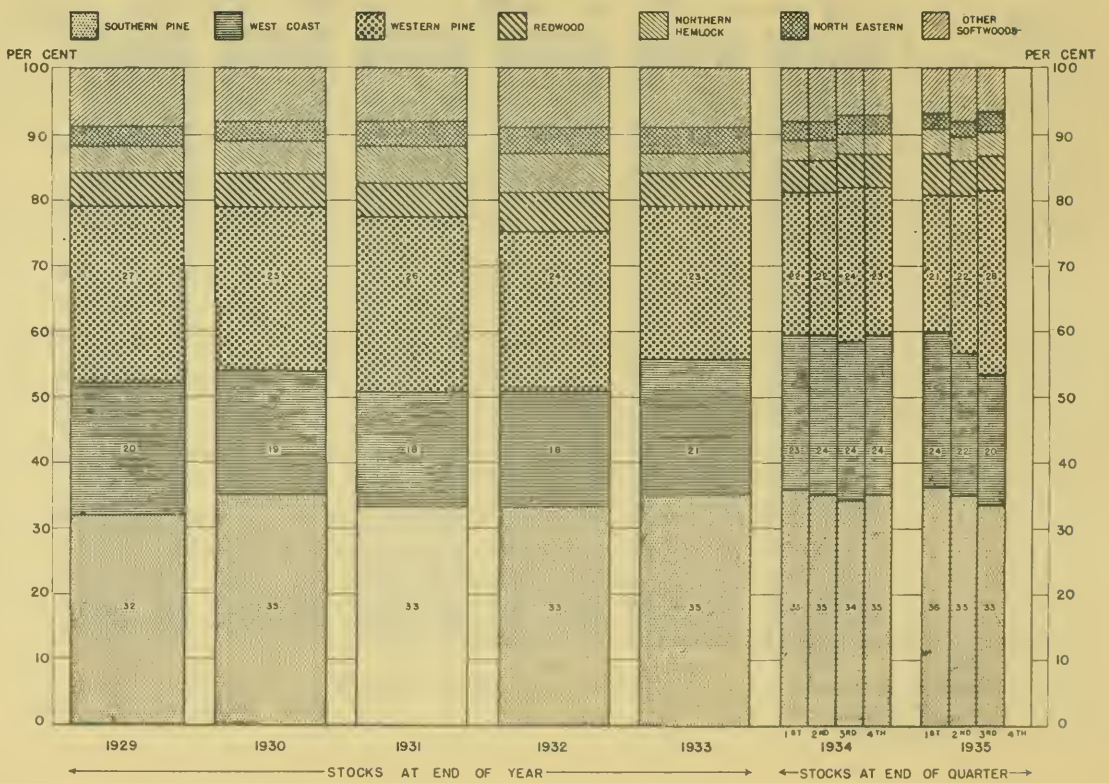
N R A
DIVISION OF REVIEW
STATISTICS SECTION
NO 355

EXHIBIT "I"

LUMBER INDUSTRY

SOFTWOOD STOCKS ON HAND, BY REGIONS, 1929 - 1935

(IN PER CENT)



SOURCE: LUMBER CODE AUTHORITY, DOCKET 5

N R A
DIVISION OF REVIEW
STATISTICS SECTION
NO. 375

EXHIBIT "F"

LUMBER INDUSTRY

HARDWOOD STOCKS ON HAND, BY REGIONS, 1929-1935

(IN PER CENT)

SOURCE: LUMBER CODE AUTHORITY, DOCKET NO. 1

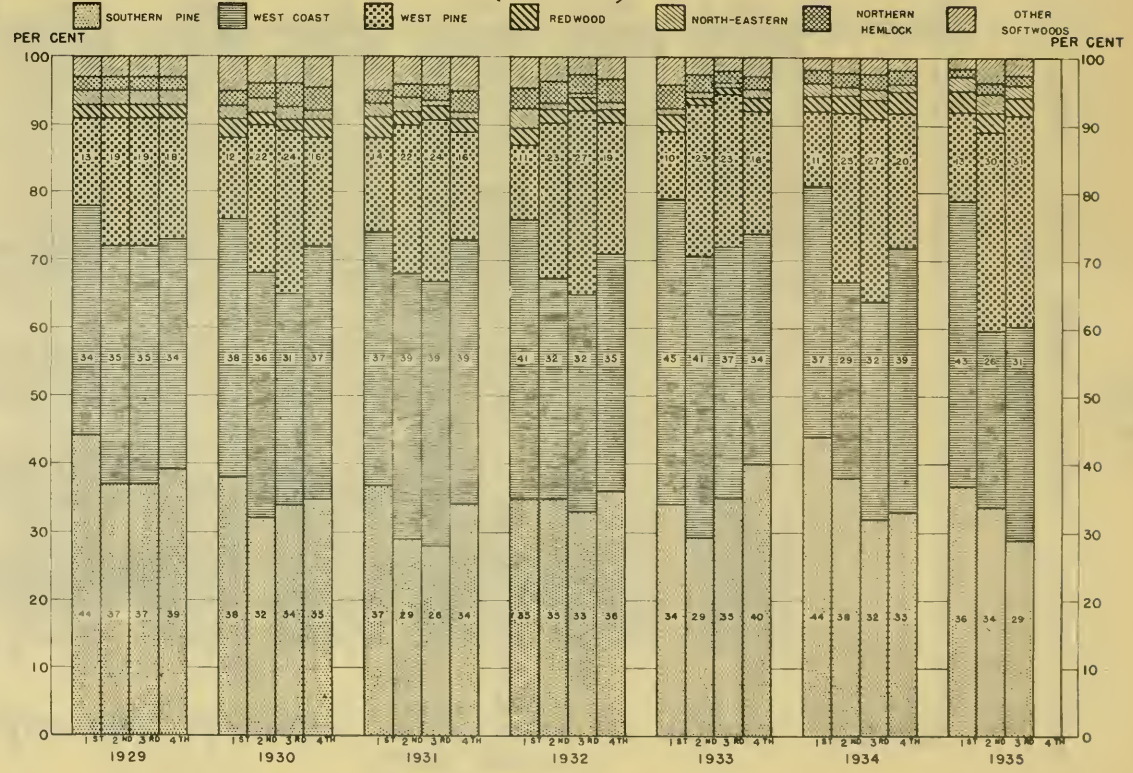
N R A
DIVISION OF REVIEW
STATISTICS SECTION
NO. 376

EXHIBIT "G"

LUMBER INDUSTRY

QUARTERLY SOFTWOOD PRODUCTION, BY REGIONS, 1929 - 1935

(IN PER CENT)



SOURCE: LUMBER CODE AUTHORITY, DOCKET NO 5

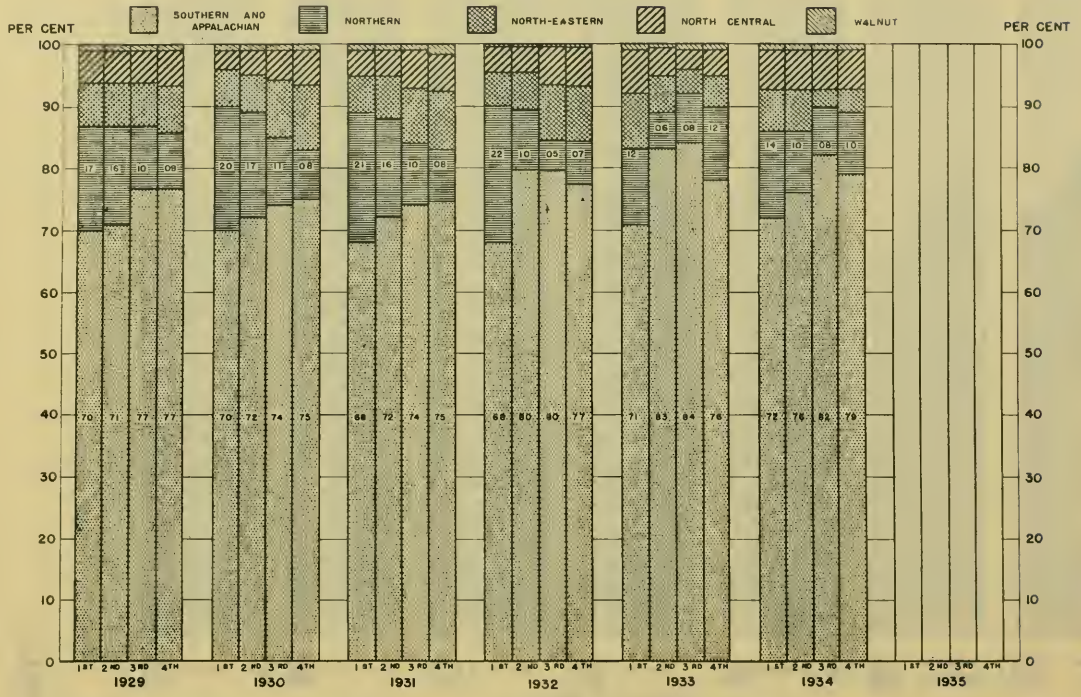
N.R.A.
DIVISION OF REVIEW
STATISTICS SECTION

EXHIBIT "H"

LUMBER INDUSTRY

QUARTERLY HARDWOOD PRODUCTION, BY REGIONS, 1929-1935

(IN PER CENT)



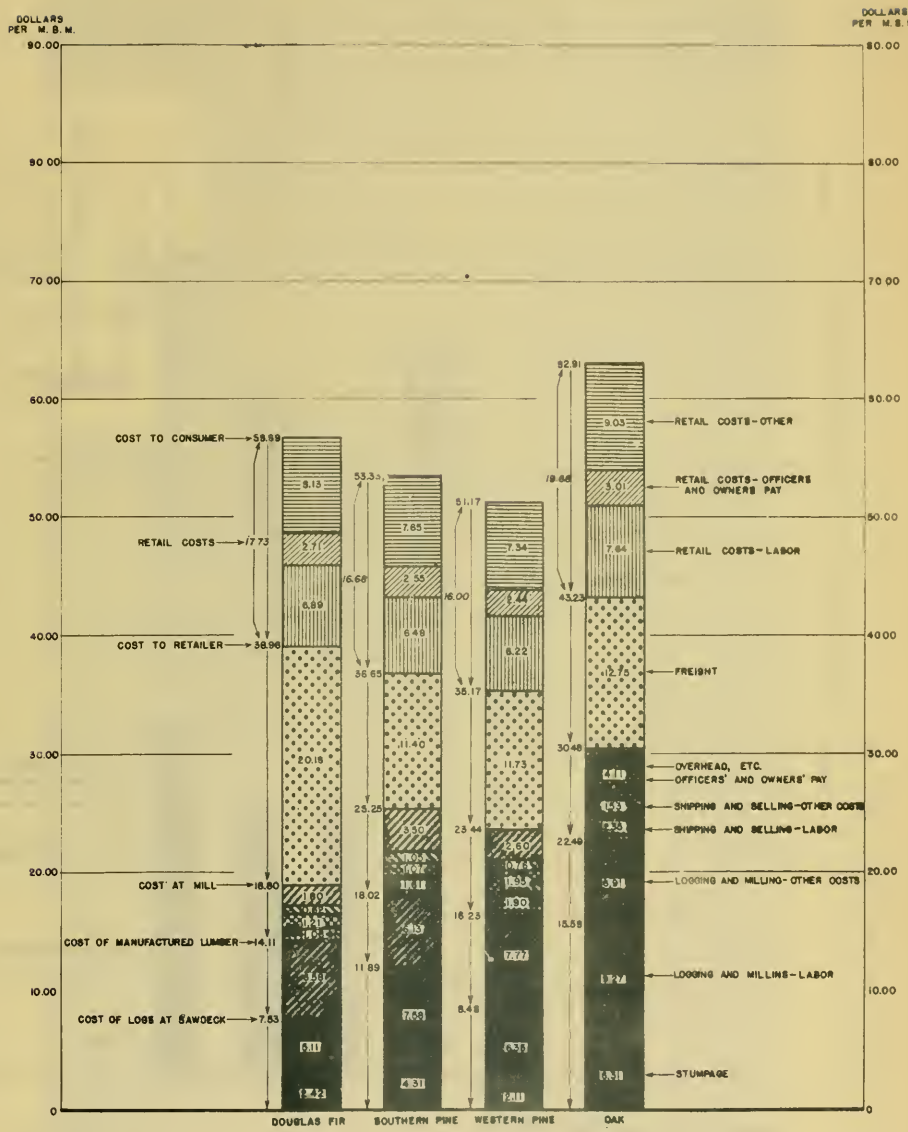
SOURCE: LUMBER CODE AUTHORITY, DOCKET NO. 5

N.R.A.
DIVISION OF REVIEW
STATISTICS SECTION
NO. 372

EXHIBIT "I"

AVERAGE LUMBER PRICE BREAKDOWN AT CHICAGO, ILLINOIS

CODE PERIOD JANUARY TO MARCH, 1934



9813

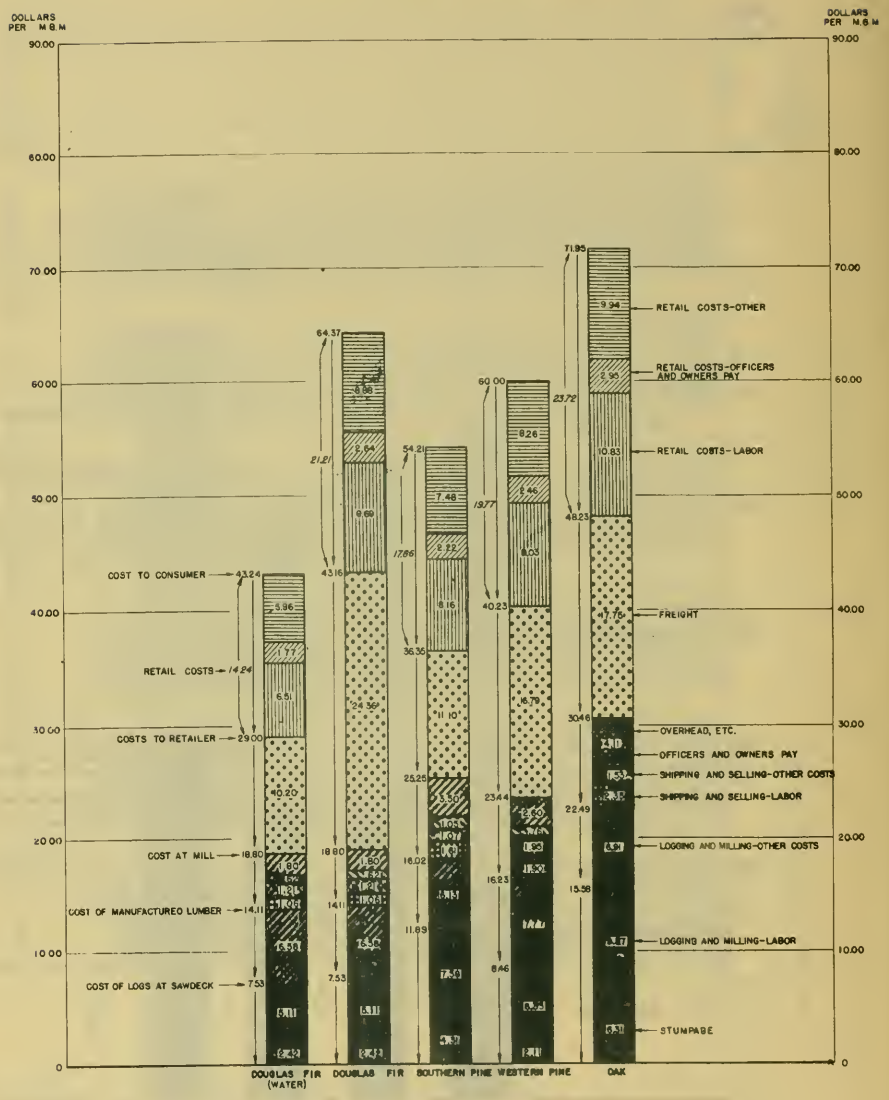
SOURCE: LUMBER AND TIMBER PRODUCTS STUDY UNIT, DIVISION OF REVIEW, N. R. A.

N R A
DIVISION OF REVIEW
STATISTICS SECTION
NO. 374

EXHIBIT "J"

AVERAGE LUMBER PRICE BREAKDOWN AT NEW YORK, N.Y.

CODE PERIOD JANUARY TO MARCH, 1934



SOURCE: LUMBER AND TIMBER PRODUCTS STUDY UNIT, DIVISION OF REVIEW, N.R.A

NRA
DIVISION OF REVIEW
STATISTIC SECTION
NO. 373

EXHIBIT "K"

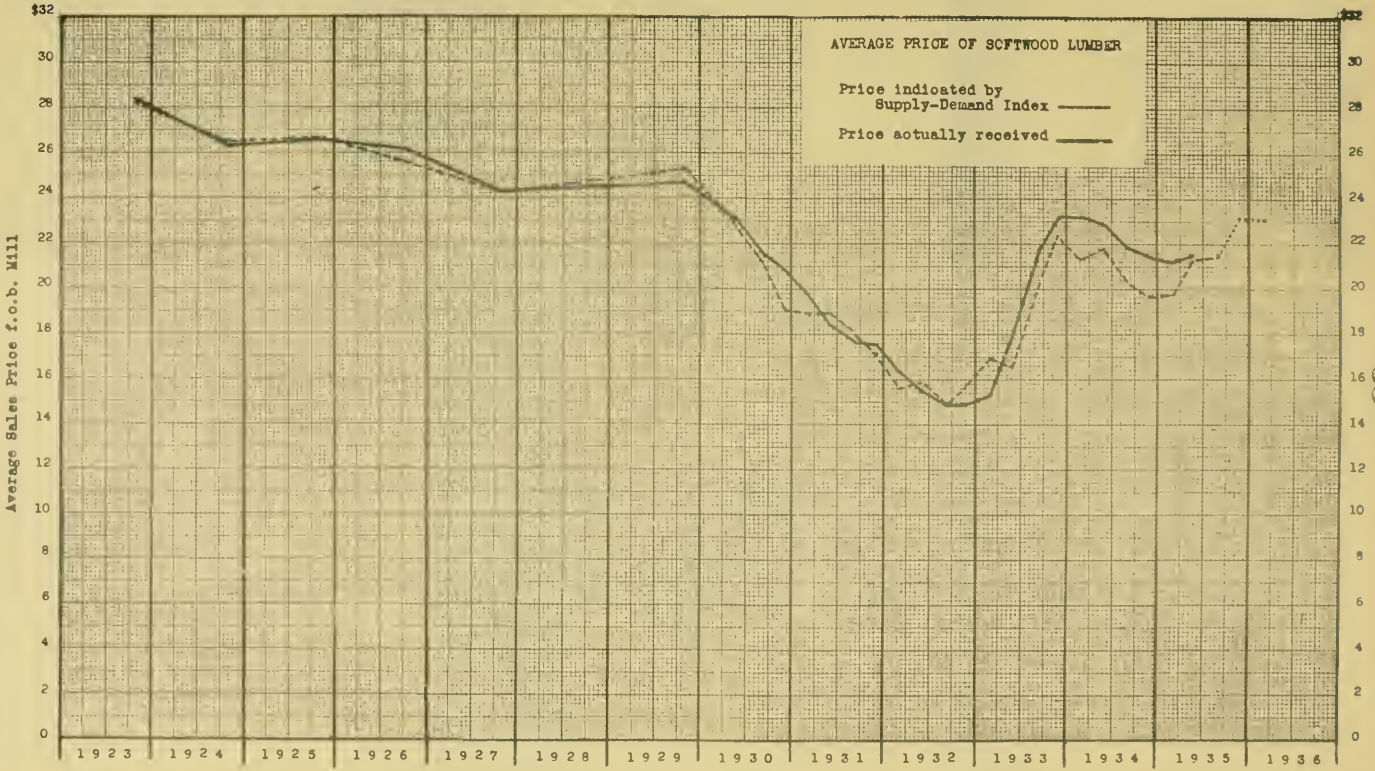


Figure 3 - Relation of Price Estimated from the Supply-Demand Index to the Actual Price per M feet f. o. b. mill from 1933 to date.

Source: Lumber Code Authority Docket #5

SOURCES OF SERIAL STATISTICAL DATA
FOR THE LUMBER AND TIMBER PRODUCTS INDUSTRIES

Period	Standing Timber	Number of Mills and Capacity	Production	Shipments and Stocks	Labor	Distribution and Consumption	Transportation	Costs and Finance	Taxes	Prices	Grades
Prior to 1880		Decennial Census of the United States	Decennial Census of the United States			Foreign Commerce and Navigation					
1880 to 1889		Decennial Census of the United States	Decennial Census of the United States			Foreign Commerce and Navigation				St. Louis Lumberman N.Y. Lumber Trade Journal	
1890 to 1899		Decennial Census of the United States	Decennial Census of the United States			Foreign Commerce and Navigation				St. Louis Lumberman Bureau of Labor Statistics Southern Lumber Journal N.Y. Lumber Trade Journal Pacific Coast Trade Journal American Lumberman	
1900 to 1909		Decennial Census of the United States Bureau of the Census	Decennial Census of the United States Forest Service			Foreign Commerce and Navigation War Department	The Timberman			St. Louis Lumberman N.Y. Lumber Trade Journal Southern Lumber Journal Pacific Coast Trade Journal American Lumberman Davis Statistical Service Harvard Record Hardwood Market Report Yellow Pine Market Reports	
1910 to 1919		Decennial Census of the United States Bureau of the Census	Decennial Census of the United States Forest Service Southern Pine Association West Coast Lumberman's Association Western Pine Manufacturers Association National Lumber Manufacturers Association	Southern Pine Association West Coast Lumberman's Association Western Pine Manufacturers Association War Department	Bureau of Labor Statistics	Foreign Commerce and Navigation Pacific Lumber Inspection Bureau	The Timberman Pacific Lumber Inspection Bureau	Bureau of Internal Revenue West Coast Lumberman's Association Southern Pine Association North Carolina Pine Association	Bureau of Internal Revenue	St. Louis Lumberman N.Y. Lumber Trade Journal Southern Lumber Journal Pacific Coast Trade Journal West Coast Lumberman Davis Statistical Service Harvard Record Hardwood Market Report West Coast Woods Market Report Yellow Pine Market Report Census of Manufactures Bureau of Labor Statistics	
1920 to 1924	Forest Service	Census of Manufactures	Census of Manufactures Southern Pine Association West Coast Lumbermen's Association Western Pine Manufacturers Association Hardwood Mfrs. Institute Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. Southern Cypress Assn. National Lumber Manufacturers Association Survey of Current Bus. National Lumber Bulletin	Southern Pine Association West Coast Lumbermen's Association Western Pine Manufacturers Association Hardwood Mfrs Institute Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. Southern Cypress Assn. National Lumber Manufacturers Association Survey of Current Bus. National Lumber Bulletin War Department	Bureau of Labor Statistics Monthly Labor Review Census of Manufactures	Foreign Commerce and Navigation Pacific Lumber Inspection Bureau Bureau of Railway Economics	The Timberman Pacific Lumber Inspection Bureau Interstate Commerce Commission	Bureau of Internal Revenue West Coast Lumbermen's Association Southern Pine Association North Carolina Pine Assn. Hardwood Mfrs Institute	Bureau of Internal Revenue	N.Y. Lumber Trade Journal Southern Lumber Journal American Lumberman Davis Statistical Service Harvard Record Hardwood Market Report West Coast Woods Market Report Yellow Pine Market Report Census of Manufactures Bureau of Labor Statistics The Timberman West Coast Lumberman	Southern Pine Association Western Pine Manufacturers Association
1925 to 1929	Forest Service	Census of Manufactures Decennial Census of the United States	Census of Manufactures Decennial Census of the United States Southern Pine Association West Coast Lumbermen's Association Western Pine Manufacturers Association Hardwood Institute Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. Southern Cypress Assn. National Lumber Manufacturers Association Survey of Current Bus National Lumber Bulletin	Decennial Census of the United States Southern Pine Association West Coast Lumbermen's Association Western Pine Manufacturers Association Hardwood Institute Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. Southern Cypress Assn. National Lumber Manufacturers Association Survey of Current Bus. National Lumber Bulletin War Department U. S. Shipping Board	Bureau of Labor Statistics Monthly Labor Review Census of Manufactures	Foreign Commerce and Navigation Pacific Lumber Inspecting Bureau Bureau of Railway Economics Forest Service	The Timberman Pacific Lumber Inspection Bureau Interstate Commerce Commission Southern Pine Association West Coast Lumbermen's Association Western Pine Manufacturers Association	Bureau of Internal Revenue West Coast Lumbermen's Association Southern Pine Association North Carolina Pine Assn. Hardwood Mfrs Institute	Bureau of Internal Revenue	N.Y. Lumber Trade Journal Southern Lumber Journal American Lumberman Davis Statistical Service Harvard Record Hardwood Market Report West Coast Woods Market Report Yellow Pine Census of Manufactures Bureau of Labor Statistics Timberman West Coast Lumberman	Southern Pine Association Western Pine Manufacturers Association
1930 to 1931	Forest Service	Census of Manufactures	Census of Manufactures Southern Pine Association West Coast Lumbermen's Association Hardwood Institute Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. Southern Cypress Assn. National Lumber Manufacturers Association Survey of Current Bus. Western Pine Association	Southern Pine Association West Coast Lumbermen's Association Western Pine Association Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. Southern Cypress Assn. National Lumber Manufacturers Association Survey of Current Bus Timber Conservation Board War Department U. S. Shipping Board	Bureau of Labor Statistics Monthly Labor Review Census of Manufactures	Foreign Commerce and Navigation Pacific Lumber Inspection Bureau Timber Conservation Board	The Timberman Pacific Lumber Inspection Bureau Interstate Commerce Commission Southern Pine Association West Coast Lumbermen's Association Western Pine Manufacturers Association	Bureau of Internal Revenue West Coast Lumbermen's Association Southern Pine Association North Carolina Pine Assn.	Bureau of Internal Revenue	N.Y Lumber Trade Journal Southern Lumber Journal American Lumberman Davis Statistical Service Southern Pine Lumber Exchange Harvard Record Pacific Coast Trade Journal Census of Manufactures Bureau of Labor Statistics Timberman West Coast Lumberman	Western Pine Manufacturers Association
1932 to 1933	Forest Service	Census of Manufactures	Census of Manufactures Southern Pine Association West Coast Lumbermen's Association Western Pine Association Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. Southern Cypress Assn. National Lumber Manufacturers Association Survey of Current Bus. Hardwood Institute	Southern Pine Association West Coast Lumbermen's Association Hardwood Mfrs. Institute Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. Southern Cypress Assn. National Lumber Manufacturers Association Survey of Current Bus Timber Conservation Board War Department U. S. Shipping Board Western Pine Association	Bureau of Labor Statistics Monthly Labor Review Census of Manufactures	Foreign Commerce and Navigation Pacific Lumber Inspection Bureau Forest Service Western Pine Manufacturers Association West Coast Lumbermen's Association Timber Conservation Board	The Timberman Pacific Lumber Inspection Bureau Interstate Commerce Commission Southern Pine Association West Coast Lumbermen's Association Western Pine Manufacturers Association	Bureau of Internal Revenue	Bureau of Internal Revenue	N.Y Lumber Trade Journal Southern Lumber Journal American Lumberman Southern Pine Lumber Exchange Harvard Record Pacific Coast Trade Journal Census of Manufactures Bureau of Labor Statistics Timberman West Coast Lumberman	Western Pine Manufacturers Association
1934 to 1935	Forest Service	Census of Manufactures	Census of Manufactures Southern Pine Association West Coast Lumbermen's Association Hardwood Mfrs Institute Southern Hardwood Producers Association Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. National Lumber Manufacturers Association Survey of Current Bus. Western Pine Association Southern Cypress Association	Southern Pine Association West Coast Lumbermen's Association Hardwood Institute Southern Hardwood Producers Association Northern Hardwood & Hemlock Association Northern Pine Manufacturers Association California Redwood Assn. National Lumber Manufacturers Association Survey of Current Bus. Lumber Survey Committee War Department U. S. Shipping Board Western Pine Association Southern Cypress Association Lumber Survey Committee	Bureau of Labor Statistics Monthly Labor Review Census of Manufactures	Foreign Commerce and Navigation Pacific Lumber Inspection Bureau Forest Service Western Pine Manufacturers Association West Coast Lumbermen's Association Timber Conservation Board Southern Pine Association	The Timberman Pacific Lumber Inspection Bureau Interstate Commerce Commission Southern Pine Association West Coast Lumbermen's Association Western Pine Manufacturers Association	Bureau of Internal Revenue	Bureau of Internal Revenue	N.Y Lumber Trade Journal Southern Lumber Journal American Lumberman Southern Pine Lumber Exchange Harvard Record Pacific Coast Trade Journal Census of Manufactures Bureau of Labor Statistics The Timberman West Coast Lumberman	Western Pine Manufacturers Association

OFFICE OF THE NATIONAL RECOVERY ADMINISTRATION
THE DIVISION OF REVIEW

THE WORK OF THE DIVISION OF REVIEW

Executive Order No. 7075, dated June 15, 1935, established the Division of Review of the National Recovery Administration. The pertinent part of the Executive Order reads thus:

> The Division of Review shall assemble, analyze, and report upon the statistical information and records of experience of the operations of the various trades and industries heretofore subject to codes of fair competition, shall study the effects of such codes upon trade, industrial and labor conditions in general, and other related matters, shall make available for the protection and promotion of the public interest an adequate review of the effects of the Administration of Title I of the National Industrial Recovery Act, and the principles and policies put into effect thereunder, and shall otherwise aid the President in carrying out his functions under the said Title. I hereby appoint Leon C. Marshall, Director of the Division of Review.

The study sections set up in the Division of Review covered these areas: industry studies, foreign trade studies, labor studies, trade practice studies, statistical studies, legal studies, administration studies, miscellaneous studies, and the writing of code histories. The materials which were produced by these sections are indicated below.

Except for the Code Histories, all items mentioned below are scheduled to be in mimeographed form by April 1, 1936.

THE CODE HISTORIES

The Code Histories are documented accounts of the formation and administration of the codes. They contain the definition of the industry and the principal products thereof; the classes of members in the industry; the history of code formation including an account of the sponsoring organizations, the conferences, negotiations and hearings which were held, and the activities in connection with obtaining approval of the code; the history of the administration of the code, covering the organization and operation of the code authority. the difficulties encountered in administration, the extent of compliance or non-compliance, and the general success or lack of success of the code, and an analysis of the operation of code provisions dealing with wages, hours, trade practices, and other provisions. These and other matters are canvassed not only in terms of the materials to be found in the files, but also in terms of the experiences of the deputies and others concerned with code formation and administration.

The Code Histories, (including histories of certain NRA units or agencies) are not mimeographed. They are to be turned over to the Department of Commerce in typewritten form. All told, approximately eight hundred and fifty (850) histories will be completed. This number includes all of the approved codes and some of the unapproved codes. (In Work Materials No. 18, Contents of Code Histries, will be found the outline which governed the preparation of Code Histories.)

(In the case of all approved codes and also in the case of some codes not carried to final approval, there are in NRA files further materials on industries. Particularly worthy of mention are the Volumes I, II and III which constitute the material officially submitted to the President in support of the recommendation for approval of each code. These volumes

set forth the origination of the code, the sponsoring group, the evidence advanced to support the proposal, the report of the Division of Research and Planning on the industry, the recommendations of the various Advisory Boards, certain types of official correspondence, the transcript of the formal hearing, and other pertinent matter. There is also much official information relating to amendments, interpretations, exemptions, and other rulings. The materials mentioned in this paragraph were of course not a part of the work of the Division of Review.)

THE WORK MATERIALS SERIES

In the work of the Division of Review a considerable number of studies and compilations of data (other than those noted below in the Evidence Studies Series and the Statistical Material Series) have been made. These are listed below, grouped according to the character of the material. (In Work Materials No. 17, Tentative Outlines and Summaries of Studies in Process, these materials are fully described).

Industry Studies

Automobile Industry, An Economic Survey of
Bituminous Coal Industry under Free Competition and Code Regulation, Economic Survey of
Electrical Manufacturing Industry, The
Fertilizer Industry, The
Fishery Industry and the Fishery Codes
Fishermen and Fishing Craft, Earnings of
Foreign Trade under the National Industrial Recovery Act
  Part A - Competitive Position of the United States in International Trade 1927-29 through 1934.
  Part B - Section 3 (e) of NIRA and its administration.
  Part C - Imports and Importing under NRA Codes.
  Part D - Exports and Exporting under NRA Codes.
Forest Products Industries, Foreign Trade Study of the
Iron and Steel Industry, The
Knitting Industries, The
Leather and Shoe Industries, The
Lumber and Timber Products Industry, Economic Problems of the
Men's Clothing Industry, The
Millinery Industry, The
Motion Picture Industry, The
Migration of Industry, The: The Shift of Twenty-Five Needle Trades From New York State, 1926 to 1934
National Labor Income by Months, 1929-35
Paper Industry, The
Production, Prices, Employment and Payrolls in Industry, Agriculture and Railway Transportation, January 1923, to date
Retail Trades Study, The
Rubber Industry Study, The
Textile Industry in the United Kingdom, France, Germany, Italy, and Japan
Textile Yarns and Fabrics
Tobacco Industry, The
Wholesale Trades Study, The
Women's Neckwear and Scarf Industry, Financial and Labor Data on

Women's Apparel Industry, Some Aspects of the

Trade Practice Studies

Commodities, Information Concerning: A Study of NRA and Related Experiences in Control
Distribution, Manufacturers' Control of: Trade Practice Provisions in Selected NRA Codes
Distributive Relations in the Asbestos Industry
Design Piracy: The Problem and Its Treatment Under NRA Codes
Electrical Mfg. Industry: Price Filing Study
Fertilizer Industry: Price Filing Study
Geographical Price Relations Under Codes of Fair Competition, Control of
Minimum Price Regulation Under Codes of Fair Competition
Multiple Basing Point System in the Lime Industry: Operation of the
Price Control in the Coffee Industry
Price Filing Under NRA Codes
Production Control in the Ice Industry
Production Control, Case Studies in
Resale Price Maintenance Legislation in the United States
Retail Price Cutting, Restriction of, with special Emphasis on The Drug Industry.
Trade Practice Rules of The Federal Trade Commission (1914-1936): A classification for comparison with Trade Practice Provisions of NRA Codes.

Labor Studies

Cap and Cloth Hat Industry, Commission Report on Wage Differentials in
Earnings in Selected Manufacturing Industries, by States, 1933-35
Employment, Payrolls, Hours, and Wages in 115 Selected Code Industries 1933-35
Fur Manufacturing, Commission Report on Wages and Hours in
Hours and Wages in American Industry
Labor Program Under the National Industrial Recovery Act, The
Part A. Introduction
Part B. Control of Hours and Reemployment
Part C. Control of Wages
Part D. Control of Other Conditions of Employment
Part E. Section 7(a) of the Recovery Act
Materials in the Field of Industrial Relations
PRA Census of Employment, June, October, 1933
Puerto Rico Needlework, Homeworkers Survey

Administrative Studies

Administrative and Legal Aspects of Stays, Exemptions and Exceptions, Code Amendments, Conditional Orders of Approval
Administrative Interpretations of NRA Codes
Administrative Law and Procedure under the NIRA
Agreements Under Sections 4(a) and 7(b) of the NIRA
Approve Codes in Industry Groups, Classification of
Basic Code, the -- (Administrative Order X-61)
Code Authorities and Their Part in the Administration of the NIRA
Part A. Introduction
Part B. Nature, Composition and Organization of Code Authorities

Part C. Activities of the Code Authorities
Part D. Code Authority Finances
Part E. Summary and Evaluation
Code Compliance Activities of the NRA
Code Making Program of the NRA in the Territories, The
Code Provisions and Related Subjects, Policy Statements Concerning
Content of NIRA Administrative Legislation
Part A. Executive and Administrative Orders
Part B. Labor Provisions in the Codes
Part C. Trade Practice Provisions in the Codes
Part D. Administrative Provisions in the Codes
Part E. Agreements under Sections 4(a) and 7(b)
Part F. A Type Case: The Cotton Textile Code
Labels Under NRA, A Study of
Model Code and Model Provisions for Codes, Development of
National Recovery Administration, The: A Review of its Organization and Activities
NRA Insignia
President's Reemployment Agreement, The
President's Reemployment Agreement, Substitutions in Connection with the
Prison Labor Problem under NRA and the Prison Compact, The
Problems of Administration in the Overlapping of Code Definitions of Industries and Trades, Multiple Code Coverage, Classifying Individual Members of Industries and Trades
Relationship of NRA to Government Contracts and Contracts Involving the Use of Government Funds
Relationship of NRA with States and Municipalities
Sheltered Workshops Under NRA
Uncodified Industries: A Study of Factors Limiting the Code Making Program

Legal Studies

Anti-Trust Laws and Unfair Competition
Collective Bargaining Agreements, the Right of Individual Employees to Enforce
Commerce Clause, Federal Regulation of the Employer-Employee Relationship Under the
Delegation of Power, Certain Phases of the Principle of, with Reference to Federal Industrial Regulatory Legislation
Enforcement, Extra-Judicial Methods of
Federal Regulation through the Joint Employment of the Power of Taxation and the Spending Power
Government Contract Provisions as a Means of Establishing Proper Economic Standards, Legal Memorandum on Possibility of
Industrial Relations in Australia, Regulation of
Intrastate Activities Which so Affect Interstate Commerce as to Bring them Under the Commerce Clause, Cases on
Legislative Possibilities of the State Constitutions
Post Office and Post Road Power -- Can it be Used as a Means of Federal Industrial Regulation?
State Recovery Legislation in Aid of Federal Recovery Legislation History and Analysis
Tariff Rates to Secure Proper Standards of Wages and Hours, the Possibility of Variation in
Trade Practices and the Anti-Trust Laws
Treaty Making Power of the United States
War Power, Can it be Used as a Means of Federal Regulation of Child Labor?

9768--4.

THE EVIDENCE STUDIES SERIES

The Evidence Studies were originally undertaken to gather material for pending court cases. After the Schechter decision the project was continued in order to assemble data for use in connection with the studies of the Division of Review. The data are particularly concerned with the nature, size and operations of the industry; and with the relation of the industry to interstate commerce. The industries covered by the Evidence Studies account for more than one-half of the total number of workers under codes. The list of those studies follows:

Automobile Manufacturing Industry
Automotive Parts and Equipment Industry
Baking Industry
Boot and Shoe Manufacturing Industry
Bottled Soft Drink Industry
Builders' Supplies Industry
Canning Industry
Chemical Manufacturing Industry
Cigar Manufacturing Industry
Coat and Suit Industry
Construction Industry
Cotton Garment Industry
Dress Manufacturing Industry
Electrical Contracting Industry
Electrical Manufacturing Industry
Fabricated Metal Products Mfg. and Metal Finishing and Metal Coating Industry
Fishery Industry
Furniture Manufacturing Industry
General Contractors Industry
Graphic Arts Industry
Gray Iron Foundry Industry
Hosiery Industry
Infant's and Children's Wear Industry
Iron and Steel Industry
Leather Industry
Lumber and Timber Products Industry
Mason Contractors Industry
Men's Clothing Industry
Motion Picture Industry
Motor Vehicle Retailing Trade
Needlework Industry of Puerto Rico
Painting and Paperhanging Industry
Photo Engraving Industry
Plumbing Contracting Industry
Retail Lumber Industry
Retail Trade Industry
Retail Tire and Battery Trade Industry
Rubber Manufacturing Industry
Rubber Tire Manufacturing Industry
Shipbuilding Industry
Silk Textile Industry
Structural Clay Products Industry
Throwing Industry
Trucking Industry
Waste Materials Industry
Wholesale and Retail Food Industry
Wholesale Fresh Fruit and Vegetable Industry
Wool Textile Industry

THE STATISTICAL MATERIALS SERIES

This series is supplementary to the Evidence Studies Series. The reports include data on establishments, firms, employment, Payrolls, wages, hours, production capacities, shipments, sales, consumption, stocks, prices, material costs, failures, exports and imports. They also include notes on the principal qualifications that should be observed in using the data, the technical methods employed, and the applicability of the material to the study of the industries concerned. The following numbers appear in the series:
9768—5.

Asphalt Shingle and Roofing Industry
Business Furniture
Candy Manufacturing Industry
Carpet and Rug Industry
Cement Industry
Cleaning and Dyeing Trade
Coffee Industry
Copper and Brass Mill Products Industry
Cotton Textile Industry
Electrical Manufacturing Industry
Fertilizer Industry
Funeral Supply Industry
Glass Container Industry
Ice Manufacturing Industry
Knitted Outerwear Industry
Paint, Varnish, and Lacquer, Mfg. Industry
Plumbing Fixtures Industry
Rayon and Synthetic Yarn Producing Industry
Salt Producing Industry

THE COVERAGE

The original, and approved, plan of the Division of Review contemplated resources sufficient (a) to prepare some 1200 histories of codes and NRA units or agencies, (b) to consolidate and index the NRA files containing some 40,000,000 pieces, (c) to engage in extensive field work, (d) to secure much aid from established statistical agencies of government, (e) to assemble a considerable number of experts in various fields, (f) to conduct approximately 25% more studies than are listed above, and (g) to prepare a comprehensive summary report.

Because of reductions made in personnel and in use of outside experts, limitation of access to field work and research agencies, and lack of jurisdiction over files, the projected plan was necessarily curtailed. The most serious curtailments were the omission of the comprehensive summary report; the dropping of certain studies and the reduction in the coverage of other studies; and the abandonment of the consolidation and indexing of the files. Fortunately, there is reason to hope that the files may yet be cared for under other auspices.

Notwithstanding these limitations, if the files are ultimately consolidated and indexed the exploration of the NRA materials will have been sufficient to make them accessible and highly useful. They constitute the largest and richest single body of information concerning the problems and operations of industry ever assembled in any nation.

L. C. Marshall,
Director, Division of Review.

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